

BIENNIAL REPORT

1937 - 1938



PENNSYLVANIA GAME COMMISSION
COMMONWEALTH OF PENNSYLVANIA



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PENNSYLVANIA GAME COMMISSION

LIEUT. COL. NICHOLAS BIDDLE, *President*.....Jenkintown
 ROSS L. LEFFLER, *Vice-President*.....McKeesport
 SAMUEL C. CASTNER.....Williamsport
 ROBERT LAMBERTONFranklin
 A. W. LEE, JR.Clearfield
 FRANK B. FOSTERPhoenixville
 WM. G. FLUKE.....Saxton
 JOHN H. PRICE.....Scranton
 SETH GORDON, *Executive Director*.....Harrisburg
 JUDD C. TURNER, *Assistant Director*.....Harrisburg

BUREAU OF REFUGES AND LANDS

W. GARD. CONKLIN.....*Director*
 JAMES N. MORTON.....*Assistant Director in Charge of Management*
 R. A. McCACHRAN.....*Assistant Director in Charge of Land Acquisition*

BUREAU OF PROTECTION

W. C. SHAFFER*Director*

TRAINING SCHOOL

R. D. No. 1, Brockway, Jefferson County

WILBUR M. CRAMER.....*Superintendent*
 R. D. REED.....*Assistant Superintendent*

DIVISION GAME SUPERVISORS

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Frank A. Myers, 541 Penn Avenue, W. Reading, Pa.

Berks, Bucks, Chester, Delaware, Dauphin, Lancaster, Lebanon, Lehigh, Montgomery, Northampton, Philadelphia, York.

DIVISION "B"

Jay C. Gilford, 1468 Wyoming Avenue, Forty Fort, Pa.

Carbon, Lackawanna, Luzerne, Monroe, Pike, Schuylkill, Susquehanna, Wayne, Wyoming.

DIVISION "C"

John B. Ross, 2313 Fairview Terrace, Williamsport, Pa.

Bradford, Columbia, Lycoming, Montour, Northumberland, Snyder, Sullivan, Tioga, Union.

DIVISION "D"

Wm. J. Davis, 525 Moore Street, Huntingdon, Pa.

Adams, Bedford, Blair, Cumberland, Franklin, Fulton, Huntingdon, Juniata, Mifflin, Perry.

DIVISION "E"

M. E. Sherman, 406 Church Street, St. Marys, Pa.

Cameron, Centre, Clearfield, Clinton, Elk, Jefferson, McKean, Potter.

DIVISION "F"

Hayes T. Englert, Box 107, South Side, Oil City, Pa.

Butler, Clarion, Crawford, Erie, Forest, Lawrence, Mercer, Venango, Warren.

DIVISION "G"

Rollin Heffelfinger, Box 396, Irwin, Pa.

Allegheny, Armstrong, Beaver, Cambria, Fayette, Greene, Indiana, Somerset, Washington, Westmoreland.

DIVISION OF ACCOUNTING AND BUDGET

NELSON E. SLAYBAUGH.....*Comptroller*
 HAROLD PLASTERER*Chief Bounty Clerk*

DIVISION OF PROPAGATION AND GAME FARMS

CHARLES W. WESSELL.....*Chief*

DIVISION OF GAME RESEARCH AND DISTRIBUTION

RICHARD GERSTELL*Chief*

DIVISION OF EDUCATION

LEO A. LUTTRINGER, JR.....*Chief and Editor, "Game News"*



Governor Earle signing the Revised Game Code (Act 316), 7:00 P. M., June 3, 1937. Witnessing the historic event are, from right to left: Col. Nicholas Biddle, President of the Game Commission; Hon. Edgar A. Schrope, Member of the House from Schuylkill County, and sponsor of the Bill; Seth Gordon, Executive Director of the Commission; and Judd C. Turner, Assistant Director.

LETTER OF TRANSMITTAL

Harrisburg, Pa.

October 1, 1938.

TO HIS EXCELLENCY, GEORGE H. EARLE
Governor of Pennsylvania.

Sir:

In compliance with Acts of the General Assembly, we have the honor to submit herewith our report covering the biennium, June 1, 1936 to May 31, 1938.

The progress during the past two years has been exceptionally outstanding, and will compare most favorably with any like period during the previous forty years.

The most noteworthy activities and accomplishments of our Commission during the biennium are summarized in the beginning of the report, and are supplemented by more detailed statements and statistical reports in the text and appendix.

Many of these important accomplishments would have been impossible had it not been for the splendid cooperation and loyal support your Excellency gave our Commission during the past two years, and we wish to express our grateful appreciation for all your many efforts in behalf of the sportsmen's program.

Our sincere appreciation is also extended the Members of the Legislature, particularly those who took such tremendous interest in Pennsylvania's game program and the complete revision of the Game Code. By so doing they helped to pave the way for a much more comprehensive future program of game management in the Commonwealth than ever adopted before.

We also extend our thanks to all the members of our staff, the sportsmen, the landowners, and to all other organizations and individuals who so ably assisted in furthering the cause of our furred and feathered friends.

With the same cooperation during the coming years, Pennsylvania will continue to hold her present important place in the wildlife restoration and management movement in North America.

Respectfully submitted,

NICHOLAS BIDDLE, *President*,
Jenkintown

ROSS L. LEFFLER, *Vice-President*,
McKeesport

SAMUEL C. CASTNER,
Williamsport

ROBERT LAMBERTON,
Franklin

A. W. LEE, JR.,
Clearfield

FRANK B. FOSTER,
Phoenixville

WM. G. FLUKE,
Saxton

JOHN H. PRICE,
Scranton

ATTEST:

SETH GORDON
Executive Director

MAJOR ACCOMPLISHMENTS

The major accomplishments and new programs launched by the Commission during the past two years, covered more fully elsewhere, are briefly summarized as follows:

1. *The Training Program*—On March 15, 1937, the initial class of twenty-seven students was graduated from the Commission's permanent Training School, and on March 15, 1938, the second class of twenty-five students was graduated. This school, established late in the previous biennium in order to assure a broadly trained and still more efficient field staff, received nationwide recognition, and several other State representatives were allowed to enter the school for special instruction at their expense. The course, consisting of all phases of activities essential to a successful wildlife program, has already fully demonstrated its value. The refresher courses for the older employes continue to produce excellent results.

2. *Revision of Game Laws*—For the first time in fourteen years the game laws were thoroughly overhauled in order to strengthen the organic machinery of the Commission and make the law fit modern conservation requirements, particularly to afford more protection to hunters and landowners, the latter especially to assure more hunting privileges.

3. *More Game Lands*—Over 75,000 acres of additional game refuges and public hunting grounds were acquired, and approximately 24,000 acres were under contract for purchase at the end of the biennium. The acquisition of this large acreage, with special emphasis upon small game territory, brought the aggregate area of State Game Lands acquired during the past eighteen years up to 583,357 acres.

4. *Additional Game Refuges*—Fifty-three primary game refuges, totaling 11,726 acres, and ten auxiliary refuges, totaling 3,625 acres, were established, the majority of them in small game territory. At the same time, the larger refuges in forested areas were split up or reduced and a group management plan of administering and managing them was adopted.

5. *Farm-Game Program*—To develop the cooperative farm-game and public hunting grounds program launched late in the previous biennium, forty-one cooperative projects, aggregating 47,679 acres, and including 13,038 acres of small retreat sanctuaries and safety zones, were established. This plan of assuring public hunting grounds in thickly populated agricultural sections on a cooperative basis with landowners is gaining much favor throughout the Commonwealth.

6. *Food and Cover Development*—Far more emphasis was laid on food and cover development on game lands during the past two years than ever before. This work included planting of many food plots, release cuttings to improve food conditions on forest areas, thinning operations on other timber areas to stimulate the growth of

food and cover, etc. This phase of the Commission's land management program is rapidly becoming one of its most important activities.

7. *Game Research Extended*—A long-time program of research was inaugurated, having for its purpose several major objectives. These objectives when reached will mean the solution of many heretofore disturbing problems affecting game birds and animals and the fur-bearers.

8. *Game Propagation Expanded*.—The biennium marked one of the greatest game restocking programs in the history of the Commission. Game propagation reached its highest peak due to improved breeding and rearing methods at the game farms as well as the development of simplified methods for successful cooperative propagation by sportsmen. The Commission also inaugurated a new policy of raising increased numbers of full-grown ringneck pheasants and bobwhite quail for spring restocking. New methods for the production of wild turkeys of high quality were developed, and experiments with artificial propagation of Hungarian partridges resulted in substantial increases in the number of these birds produced.

9. *Larger Game Purchases*.—More money was spent to purchase game during the past two years than previously. More adult stock was released from the game farms, and more was acquired through live-trapping and redistribution from private, municipal, or state-owned properties where hunting was prohibited, to public shooting grounds.

10. *Educational Program*—Increased interest in the Pennsylvania Game News, monthly publication of the Commission, resulted in more than doubling the subscription of this periodical during the two-year period. The circulation is now almost four times that of January 1, 1936. Likewise, the increased demand on the part of sportsmen and the schools made it necessary to expand the lecture and motion picture program considerably. Conservation education has become one of the most important phases of game administration.

NEW LEGISLATION

The Pennsylvania Game Law was codified for the first time in 1923. In 1937 the entire law was recodified in order (1) to clarify certain ambiguities which had crept in through numerous amendments during the intervening fourteen years, (2) to revise or add certain other provisions to meet present day needs, and (3) to eliminate antiquated or needless regulations, and to simplify and improve the law throughout. The highlights of the new legislation, enacted during the 1937 session of Legislature (Act of June 3, 1937, P. L. 1225), are as follows:

Re-establishing rotating or staggered terms for Members of the Commission, with maximum terms of eight years instead of six, and changing the official designation of the Commission from the Board

of Game Commissioners to the "PENNSYLVANIA GAME COMMISSION," the name long used in common practice. The title of the administrative head was changed to Executive Director instead of Executive Secretary.

Absolutely barring by law all political activities on the part of the employes of the Commission, in keeping with long established policy, and providing that no employe may be dismissed without a hearing before the Commission's Trial Board.

Providing for the issuance of hunting licenses by agents appointed throughout the Commonwealth by the Department of Revenue, including County Treasurers; and extending the power of the Commission to revoke licenses better to safeguard human life and to protect private property.

Establishing additional rules and regulations on safety and property damage, especially to provide punishment for (1) using firearms carelessly, or while intoxicated or under the influence of narcotics; (2) carrying loaded shotguns and rifles in automobiles; (3) shooting at game while it is on a public highway; (4) hunting in groups of more than five for small game; (5) shooting promiscuously during the big game season; and (6) carrying rifles and ammunition larger than a .22 calibre at night, unless in cases or securely wrapped. Special provisions were added to punish those who destroy farm property while hunting or trapping.

Encouraging clubs and individuals to raise game for commercial or stocking purposes, but prohibiting operators of commercial propagating plants from shooting any small game thereon except during the regular open season and under the same provisions as those which apply to wild game.

Regulating clubs and individuals who desire to raise large quantities of ringneck pheasants, chukar partridges and mallard or black ducks for shooting purposes on their own lands under special authority of regulated shooting ground permits. This law for the first time gave the Commission specific regulatory control over such shooting grounds.

Modification of dog training and field trial laws, adding the month of March onto the training season, and permitting the training of coon dogs until midnight and rabbit dogs until 9 P. M., instead of all night and 10 P. M. respectively. No permits for field trials are now necessary during the training period for dogs, and they may be held during the first half of April under permit from the Commission.

Authorizing retriever trials under stringent regulations. Also for the first time requiring all fox hunting clubs which hunt packs of twenty or more hounds to secure permits, costing \$50 per year.

Under the new law no dogs are allowed to chase wild birds or animals of any kind between April 1 and August 19 inclusive, except

that the Commission may allow fox hunting in any county, upon petition, throughout the year except for a sixty-day period.

Declaring the raccoon a game animal only, and prohibiting trapping of raccoons except in those counties where the Commission deems it desirable to control their numbers.

Declaring the woodchuck a game animal, but permitting farmers to kill them throughout the year to protect their property.

Authorizing the Commission to place skunks on the vermin list in counties where they become too abundant.

Liberalized the law governing the acquisition and management of state game lands, refuges, and public hunting grounds, to allow expansion of farm-game refuge and public hunting ground projects.

Establishing two special archery preserves of 1,000 acres each, for bow and arrow hunting only, with an additional permit fee of \$2.

Giving the Game Commission discretionary power to regulate bounty payments as economic conditions, fur prices, and the abundance of predators may justify.

Allowing persons to deposit only one-half of the regular penalty where large game is killed by mistake, and two-fifths of the penalty for any other bird or animal so killed.

Clarifying the purposes for which the game fund may be expended, and providing for cooperative undertakings with other agencies.



More headway in establishing laws for the protection of the landowner, and in promoting friendly relations between him and the sportsman, was gained during the past few years than ever before.



Uniformed Game Protectors stop and search cars for illegal game throughout the entire small and large game seasons. Many cheaters have been nabbed in this manner.

GAME PROTECTION

THE TRAINING PROGRAM

Game protection in its numerous present-day ramifications is a most important phase of proper game management, and field administrative requirements are constantly becoming more complex and exacting. Realizing this, the Commission late in the previous biennium approved the establishment of a school for training new men especially for such responsibilities, and to give its older, well-seasoned employees like opportunity to improve their knowledge of modern game management practices.

This vocational training school, the first of its kind in America, was officially opened on July 7, 1936, when thirty-five carefully selected students were admitted. To assure state-wide representation, five students were selected from each of the Commission's seven field administrative divisions. Competitive examinations to select these men were held on June 20, 1936, in which 349 applicants participated. The minimum height for entrance in 1936 was five feet, eight inches, the minimum weight 135 pounds, and the age limit between 21 and 40 years. The average age of the students accepted was 25 years.

On October 12, following the first three months of training, a field day was held for the purpose of acquainting the public with the school and its aims.

The first class was graduated on March 15, 1937, and twenty-seven successful students were given their diplomas amid appropriate ceremonies in the State Capitol. Of this number, seventeen were assigned to permanent positions as Traveling Game Protectors and ten as Game Refuge Keepers.

The second class was chosen by the same method in the spring of 1937. Out of 140 applications received, seventy-nine were accepted to participate in the preliminary mental examination, and sixty-one were rejected because of their inability to meet the necessary requirements of the Commission. One of the primary requisites was practical experience in hunting, fishing, trapping or game management. The qualifications also specified that the applicant must be between 25 and 35 years, the minimum height was increased to five feet, nine inches, and the minimum weight was raised to 140 pounds. Deputy Game Protectors were given recognition for satisfactory service by allowing two years above the maximum age limit for each five years of Deputy service, with the provision that no Deputy Game Protector over 45 years of age would be accepted. In addition to the age allowance for Deputy Game Protectors, these officers for continuous service were given credit ten per cent above the grade actually made in the written examination.

When the examination was held on June 9, 1937, in Harrisburg, seventy-one of the seventy-nine eligible applicants appeared and participated. Of this number, twenty-eight successfully passed the written and rigid physical examinations, and entered the school on June 20. The class averaged twenty-eight years of age, five feet, ten and three-quarter inches in height, and 161½ pounds in weight.

The second annual field day at the Training School was held September 24, and was well attended by interested sportsmen and friends. The second class was graduated March 15, 1938, at Harrisburg, and consisted of twenty-five members. Ten of the graduates were given permanent assignments to the field service, and the remaining fifteen were employed on a full-time temporary basis at a per-diem rate until vacancies in the regular force occur to absorb them into the permanent service.

The older members of the field staff have taken a commendable interest in the annual refresher courses at the Training School, and a large percentage of them have taken advantage of the opportunity offered each summer better to equip themselves to advance in the organization.

The Commission is fully convinced this training program is paying real dividends in better service to the sportsmen and others interested in wildlife management.

LAW ENFORCEMENT

Law enforcement still plays a major part in Pennsylvania's game program, and during the past two years 6,240 prosecutions were brought, compared with 4,466 in the previous biennium. The increase was due both to more intensive activities on the part of field officers, and to more prosecutions during the hunting season of 1937 when the provision imposing a penalty of \$1 for failure to sign the hunter's license certificate was enforced. A well organized searching campaign,

in which both temporary and permanent stations were established at appropriate places on the highways to stop and examine cars, was also responsible for a noticeable increase in the number of prosecutions for killing illegal game and overstepping bag limits.

These concentrated efforts are beginning to show a definite trend toward better law observance and an increased respect generally for the game laws.

The following tabulation of prosecutions and penalties collected since June 1, 1932, gives an interesting comparison of enforcement activities during the past six years. These figures are for fiscal years, June 1 to May 31:

	<i>No. of Prosecutions</i>	<i>Penalties Collected</i>
Fiscal Year 1932-1933.....	2079	\$44,434.36
Fiscal Year 1933-1934.....	1871	38,938.83
Fiscal Year 1934-1935.....	2074	40,756.31
Fiscal Year 1935-1936.....	2392	60,209.11
Fiscal Year 1936-1937.....	2278	59,365.20
Fiscal Year 1937-1938.....	3962	64,450.75

HUNTERS' LICENSES REVOKED

Those who persistently ignore the law must suffer the consequences. Thus, in July, 1936, the Commission, through the Department of Revenue, revoked the hunting rights of 254 persons in Pennsylvania for violating the game laws. In July, 1937, 188 additional hunters suffered the same penalty. It is not the Commission's policy to revoke the license of every person who breaks the law, but those who are found guilty of the more serious offenses, such as the careless use of firearms resulting in injury to human beings, major infractions of the game laws, and second and third convictions, are punished accordingly. In some cases revocation was necessary against persistent violators; though the offenses for which actually prosecuted may have been minor ones, they had insisted upon disregarding game regulations on repeated occasions. The revocation of licenses is a most effective weapon, and usually produces the desired effect in promoting proper observance of the law when cash penalties or imprisonment fail.

GAME FEEDING

Climatic conditions during the winters of 1936 and 1937 were most favorable to wildlife. Therefore it required much less artificial feeding than in previous years. The expenditures for feeding game in the past four winters are given for comparison:

Cost of feed for game 1934-1935.....	\$ 9,121.32
Cost of feed for game 1935-1936.....	26,842.09
Cost of feed for game 1936-1937.....	11,717.55
Cost of feed for game 1937-1938.....	5,457.00

One of the reasons for the reduced expenditure for game foods in the winter of 1937-1938 is that a large quantity of feed remained undistributed from the previous mild winter, and was thus available for use the next season. The cooperation field officers received from Boy Scouts, mail carriers, sportsmen, farmers and others interested helped greatly to save the seed stock remaining after the disastrous winter of 1935-1936, when the quail stock particularly suffered terrific losses. The Commission's deepest appreciation is extended to those who so kindly assisted in these emergencies. The results of their efforts speak for themselves.



Deer are so plentiful in most of the forested sections of the Commonwealth that they have exhausted their food supply. In many cases they have become a serious menace to agriculture.

DEER KILLED TO PROTECT PROPERTY

Every year, especially in recent years, deer because of their increasing numbers commit many depredations. Following is a summary of deer killed by farmers and orchardists during the past two years as a protection to crops, fruit and ornamental trees:

Deer killed and retained for food.....	2,683 (90.9%)
Deer delivered to hospitals and other charitable institutions for human consumption.....	165 (5.5%)
Unfit for human consumption.....	106 (3.6%)
	<hr/> 2,954

Such deer were killed in forty-five of the sixty-seven counties, a clear indication of the spread beyond their normal range. Although there were not as many deer killed by farmers during the past biennium as in the two previous years, when 4,086 deer were killed, they continue to be a serious problem to the farmer and orchardist, and proper control measures must be adopted from time to time to keep the herd within the available natural food supply in the forests.

DEER-PROOF FENCES

One method of combating the deer problem has been to protect property against their depredations. The game law provides for the erection of deer-proof fences, an "insurance policy" formerly covered by a separate Act of Assembly. Deer damage to farms, orchards and commercial truck patches has continued to such a heavy extent that it was necessary to supply 6,354 rods of deer-proof fence during the year 1936-1937, and 8,397 rods in the following year, making a total of 14,751 rods, or forty-six miles of fence to relieve such depredations. Such fencing erected during the biennium cost the Commission \$22,273.68, and was furnished in twenty-three of the sixty-seven counties, as follows.

*Deer-Proof Fences Furnished
June 1, 1936 to May 31, 1938*

<i>County</i>	<i>No. of Rods</i>	<i>Cost</i>
Adams	740	\$1,115.18
Butler	230	323.55
Cambria	116	175.40
Cameron	1550	2,410.48
Carbon	207	359.48
Clearfield	232	341.80
Clinton	120	159.97
Elk	593	1,048.90
Franklin	591	1,039.06
Jefferson	1958	3,167.55
Luzerne	1843	2,732.86
Lycoming	164	253.30
McKean	275	—*
Mifflin	201	179.17
Monroe	475	755.02
Pike	405	643.23
Potter	1752	2,852.07
Schuylkill	900	1,298.83
Snyder	270	21.10*
Tioga	400	659.13
Venango	380	679.97
Warren	86	88.90
Westmoreland	1363	1,968.73
TOTAL	14,751	\$22,273.68

Under the present law the Commonwealth supplies the wire and staples, and the landowner furnishes the posts and erects the fence. This has in the past been a fairly effective method of relieving deer damage, but the cost in relation to the benefits now is rather prohibitive. In fact, since the deer have spread so far beyond their normal range the plan seems to have outlived its usefulness.

*Surplus fence from previous orders used.

BEAR DAMAGE

The present game law provides for the payment of not more than \$3,000 a year for damage by bears to livestock, poultry or bees. Following is a summary of bear damage claims paid during the biennium under this provision:

<i>County</i>	<i>No. Claims</i>	<i>Sheep Killed</i>	<i>Bee Hives</i>	<i>Amount Paid</i>
Bedford	1	9		\$ 46.00
Bradford	4	4		32.00
Cameron	1	1		8.00
Columbia	3		21	233.90
Elk	2	2	1	21.50
Jefferson	2		2	8.50
Lycoming	1		3	30.00
McKean	25	61	2	582.60
Potter	28	39	8	353.50
Sullivan	4	1	10	40.00
Tioga	12	19	14	220.50
Union	1		3	15.00
Warren	2	3		30.00
Totals	86	139	64	\$1621.50

Average paid, per head of sheep\$ 8.50

Average paid, per bee hive 6.87

Total paid for sheep killed 1181.60

Total paid for bee hives destroyed..... 439.90

It is gratifying to report that only eighty-six claims for bear damage were received during the past two years, a considerable decrease in the number of claims submitted during the two preceding years, when 116 claims were paid, totaling \$2,568.94. During the present biennium the heaviest damage occurred in McKean County, where sixty-one sheep were killed and two bee hives destroyed. Open seasons help somewhat to control their ravages against livestock and bees, but where certain individuals acquire killer instincts farmers are compelled to protect their property by shooting the animals as permitted by law.



Several thousand wild turkeys are propagated annually at the State Wild Turkey Farm and in natural propagating areas.

GAME PROPAGATION

In order to provide shooting for the large army of hunters which goes afield annually in Pennsylvania, the natural supply of game must of necessity be augmented by supplementary stock.

Game propagation on the State Farms, and in cooperation with sportsmen and landowners in the field, met with unusual success during the past two years. Improved breeding and rearing methods, increased production and liberation of adult game birds, successful experiments with production of difficult species, and the development of improved and simplified methods for successful cooperative propagation by sportsmen, were the principal objectives toward which the Commission's operations were directed. Particular emphasis was placed upon raising game of increased wildness and vitality.

WILD TURKEY PROPAGATION

The Wild Turkey Mating Areas, established early in 1936, resulted in a marked improvement in the quality and wildness of turkeys reared on the Wild Turkey Farm. Mated with genuine wild toms in game refuges located in the Commonwealth's finest wild turkey counties, selected breeding hens from the State Farm produced a total of 4,431 eggs in these eight to twelve acre enclosures, resulting in the production of 1,428 wild turkeys of superior quality, in 1937.

Wild turkey breeders on the State Farm produced an additional 2,666 eggs and 1,424 turkeys during the same year. While still in the experimental stage, the establishment and operation of the Com-



Although experiments so far have been limited, it is hoped soon permanently to establish the Hungarian Partridge on a shooting basis in Pennsylvania.

mission's eight Wild Turkey Mating Areas has been a definite forward step in the production and restoration of these popular birds.

INCREASED PRODUCTION OF ADULT BIRDS

Pursuing the Commission's policy of raising increased numbers of full-grown ringneck pheasants and bobwhite quail for spring restocking, the following adult birds were shipped from the State Farms during the calendar years of 1936 and 1937:

<i>Kind</i>	<i>Sex</i>	<i>Shipped</i>		<i>Total</i>
		1936	1937	
Ringneck Pheasants.....	Male.....	10,266	17,562	27,828
Ringneck Pheasants.....	Female.....	591	3,040	3,631
Bobwhite Quail	Both.....	905	4,066	4,971

In addition, 33,810 ten to twelve week old hen pheasants were also shipped during the same period. The benefits derived from this policy are clearly shown in the steadily increasing pheasant kills throughout the Commonwealth.

Mortality records on the farms for both pheasant and quail reached an all-time low. Of 93,596 pheasants sent to the brooders in 1936-1937, only 7,395 or 7.8 per cent were lost during the brooding period. During the same years only 2,570 quail, or 10.5 per cent, were lost out of a total of 24,339.

HUNGARIAN AND CHUKAR PARTRIDGES EXPERIMENTS

While very limited experiments with the artificial propagation of Hungarian and Chukar partridges had been carried on in previous years, substantial increases were achieved in the number of Hungarian

partridges produced. In 1936 a total of 606 Huns were raised on the farms, while in 1937 this figure was increased to 855. This represents the largest number of Hungarian partridges ever raised in Pennsylvania by artificial incubation and brooding.

Many hitherto unsolved problems in connection with the incubation and brooding of these difficult birds seem to have been overcome, and it is believed newly developed methods have brought their propagation nearer to the point where adequate numbers can be produced.

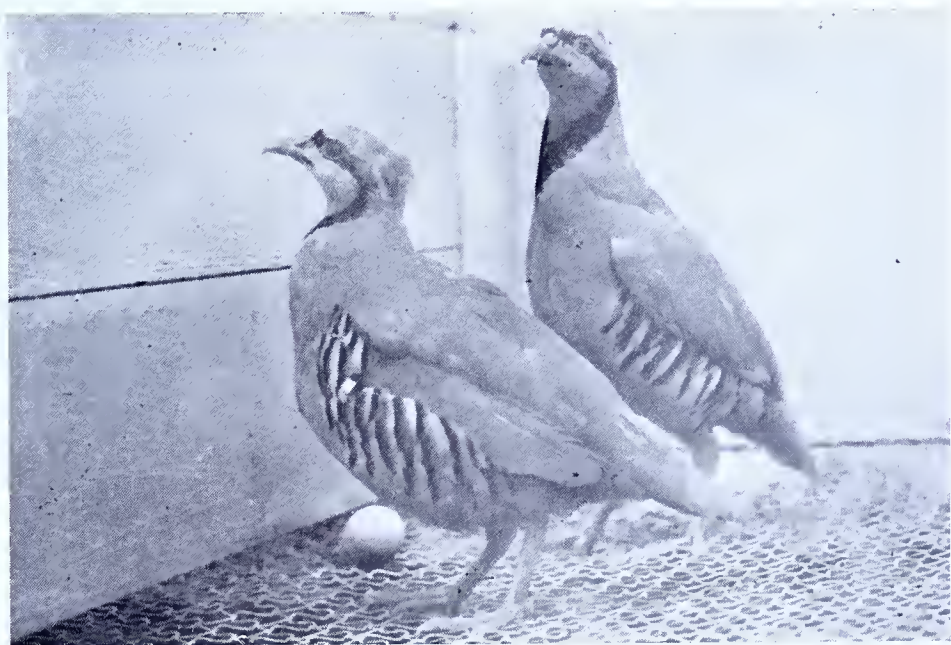
It was also found that Chukar partridges are comparatively easy to propagate and that their production need only be limited by available equipment and stocking requirements.

PROPAGATION IN THE FIELD

Considerable attention was directed toward increasing and simplifying game propagation by sportsmen and their organizations in the field, and 60,915 day-old ringneck pheasant chicks and 101,373 hatchling eggs were shipped to them for that purpose.

Improved and more detailed pamphlets containing instructions for successfully raising pheasants and quail were published, and two important educational films showing operations in detail on the State Game Farms were produced and widely shown.

The new Sportsmen's Game Propagating Pen, in which pheasants, quail and Chukar partridges may be reared successfully in small numbers, was developed and made available to sportsmen and landowners interested in game bird propagation. More easily operated and less



Chukar Partridges may some day help to relieve the burden of shooting from our native game birds.

expensive units for field propagation were also developed and recommended to sportsmen in response to their increased interest and demands.

NEW PHEASANT BREEDING STOCK

In an endeavor to introduce new blood in the ringneck pheasant breeding stock, and to increase the speed of flight and getaway of pheasants raised and released, 238 selected Chinese pheasant breeders were added at the Jordan and Fisher State Game Farms.

The following brief statistics show the operations on the four State Game Farms during the biennium:

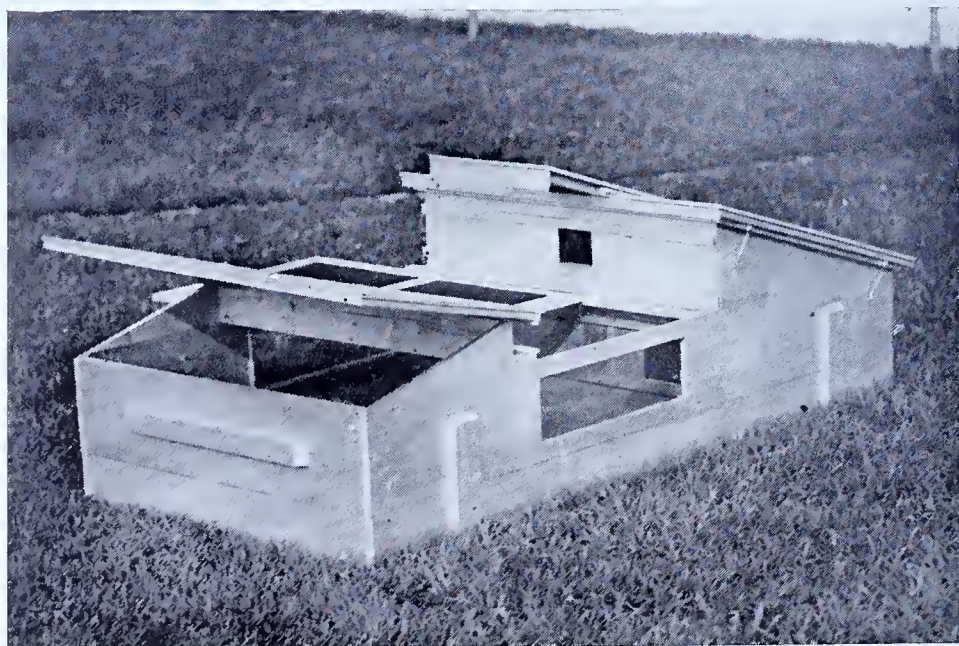
<i>Ringneck Pheasants</i>	<i>Calendar Year</i>	
	<i>1936</i>	<i>1937</i>
Total number eggs produced	143,110	170,242
Total number eggs set at farms.....	86,667	104,484
Total number eggs shipped to sportsmen.....	48,300	54,488 (a)
Total number day-old chicks shipped to sportsmen.....	33,711	27,204
Total number young pheasants shipped for restocking..	14,062	19,748
Total number mature pheasants shipped for restocking.	10,857	20,602

Includes:

- (a) 1000 sent to State College
- 100 sent to Eastern Penitentiary

<i>Bobwhite Quail</i>	<i>Calendar Year</i>	
	<i>1936</i>	<i>1937</i>
Total number eggs produced	14,137	20,237
Total number eggs set at farm	13,243	19,090
Total number young quail shipped for restocking.....	4,176	8,620
Total number mature quail shipped for restocking.....	905	4,066

<i>Wild Turkeys</i>	<i>Calendar Year</i>	
	<i>1936</i>	<i>1937</i>
Total number eggs produced (Areas).....	.....	4,431
Total number eggs produced (Farm).....	5,152	2,666
Total number eggs set.....	4,320	6,590
Total number turkeys shipped for restocking.....	2,055	3,034



This new type sportsmen's rearing pen has proved very successful and many clubs are now using it with excellent results.



Thousands of acres of good game lands are being acquired each year, both in large and small game territory. They provide both refuges and public hunting grounds.

GAME REFUGES AND PUBLIC HUNTING GROUNDS

If our game is to maintain itself in sufficient numbers to withstand the inroads of civilization and its many natural enemies, to say nothing of heavy annual shooting, it must be provided with favorable feeding and breeding grounds, especially retreat areas or refuges whereon it may live and propagate unmolested.

The acquisition, maintenance, and development of such refuges and the public hunting grounds surrounding them has long been one of the most important of all the Commission's activities.

Today units of the refuge system, which has become renowned throughout North America, are widely distributed throughout the Commonwealth, and additional ones are constantly being added. The more important units are the State Game Lands, purchased and maintained by the Commission from the Game Fund, and comprise game refuges and public hunting grounds managed wholly for the benefit of the sportsmen. A number of refuges are established on State Forests, the major portion of those forests being open to public hunting.

Other units include privately-owned lands for which the hunting rights are vested in the Commission for a period of five or more years. These likewise include game refuges as well as public hunting grounds.

EXPANSION OF REFUGE SYSTEM

The system has expanded far beyond even the most sanguine expectations of its originators in 1905. The extent to which it has grown is evidenced by the following statement of units in operation at the close of the biennium:

- 127 Tracts of State Game Lands, aggregating 583,358 acres, purchase of which was started in 1920.
- 128 Primary Refuges on State Game Lands, totalling 59,914 acres. (This acreage is included in the above.)
- 81 Primary Refuges on State and National Forests, totalling 67,589 acres.
- 44 Auxiliary Refuge Projects, aggregating 52,934 acres, of which 14,734 acres comprise refuges, the remainder being open to public hunting.
- 41 Cooperative Farm-Game Projects, aggregating 47,679 acres, of which 13,038 acres comprise refuges and safety zones, with the remainder open to public hunting.

In accordance with the Commission's present policy, some of the larger refuges were reduced to approximately 1,000 acres, and additional small ones were established in the general vicinity in order to provide more adequate protection for small game.

For a complete list of all refuges established at the end of the biennium, see Tables Nos. 8, 9 and 10 found on pages 70, 72 and 74 of this report.

The following Primary State Game Refuges were established during the biennium:

County	Serial Number of Refuge	Acreage
Adams	527 G	187
Armstrong	137	69
Bedford	73 G	390
Bedford	97 C	397
Bedford	97 D	373
Bedford	41 B	100
Berks	106	88
Berks	110 A	175
Berks	110 B	36
Bradford	123	94
Butler	95 A	47
Butler	95 B	30
Butler	95 C	43
Butler	95 D	23
Cambria	108 A	125
Cameron	14 C	400
Centre	103	180
Centre	33 B	183
Centre	33 C	110
Clearfield	77	134
Clearfield	87	248
Clearfield	120	135
Clearfield	98	150
Clinton	89	345

County	Serial Number of Refuge	Acreage
Cumberland	527 B	398
Cumberland	527 C	185
Cumberland	527 D	115
Cumberland	527 E	569
Cumberland	527 F	652
Erie	109	123
Erie	101	85
Forest	519 B	1,016
Huntingdon	73 F	252
Huntingdon	112	216
Lackawanna	91 A	367
Lancaster	136 A	14
Lancaster	136 B	4
Lycoming	68 B	49
Lycoming	68 C	55
McKean	30 B	334
Mifflin	113	54
Northumberland	115	217
Potter	515 C	303
Somerset	111	468
Sullivan	13 B	308
Sullivan	533	814
Sullivan	501 B	567
Susquehanna	35 B	50
Venango	96	94
Washington	117	130
Wyoming	57 D	144
York	83 A	40
York	83 B	41

The following Auxiliary State Game Refuges were established:

Berks	99	2,820
Berks	100	122
Centre	102	170
Huntingdon	107	180
Montour	101	40
Montour	103	50
Montour	104	32
Venango	98	200
York	108 A	6
York	108 B	5

POLICIES CONTINUE TO CHANGE

Although policies in connection with the program are much the same as they have been for almost two decades, the Commission has made certain important changes during the past few years, as follows:

1. Greater emphasis to be given to the improvement of game environment on lands purchased or under its control.
2. Greater efforts to be made to acquire marginal farms to become State Game Lands, instead of purchasing only wooded or forest lands.
3. Reduction in size of many of the large refuges to approximately 1,000 acres, and the creation of numerous additional refuges of small size to provide more adequate protection for both small forest game and farm-game.

4. Acquisition of more public hunting grounds and the creation of numerous small refuges in the more intensively tilled sections of the Commonwealth, under the cooperative Farm-Game Program.
5. Grouping together of management units to assure economy and better administration.

ACQUISITION OF STATE GAME LANDS

Wonderful progress was made in the acquisition of State Game Lands, and title was secured for a total of 75,951.3 acres during the two-year period covered by this report. Approximately 24,000 acres in addition were under contract for purchase at the end of this biennium. This brought the aggregate area of such lands, acquired over a period of eighteen years, to 583,357.7 acres.

The consideration paid for the 75,951.3 acres amounted to \$322,201.52, or an average of \$4.24 per acre. The total consideration for the 583,357.7 acres amounted to \$2,143,570.44, or an average of \$3.67 per acre. The higher average price per acre is reflected largely in the purchase of marginal or sub-marginal farms.

The present value of the 583,357.7 acres of State Game Lands, conservatively estimated, at the end of the biennium was \$3,070,665, or an average value of \$5.09 per acre.



Panorama of a portion of the famous Mt. Gretna Military Reservation, which was purchased by the

One of the outstanding acquisitions during the biennium was that of the Mt. Gretna Military Reservation in Lebanon County, comprising 2,207.3 acres, for which title was secured from the Department of Military Affairs on March 30, 1938. This acreage, long used for training Pennsylvania's National Guard, and well known by persons throughout the State, is now designated State Game Lands No. 145. Game management practices will be conducted on this area which will materially increase the game crop and to provide better hunting. It will be developed into a very valuable demonstration area to show what can be done by applying sound game management practices on suitable areas. The area includes about 700 acres of good tillable farm land; the remainder being set with a good stand of timber.

Attention is invited to Table Nos. 5, 6 and 7 on pages 66 to 69 of this report for information as to the acreage and cost of State Game Lands acquired each year exclusive of various acquisition expenses, since the purchase program started; for the acreage contained in each of the 127 tracts of State Game Lands and its costs; and for the acreage in the respective counties.

As previously mentioned, the Commission is now laying greater stress on the acquisition of marginal or sub-marginal farms which are, of course, more desirable for farm-game species.

However, certain economic factors are involved in the acquisition



Game Commission for refuges and hunting grounds, and as a game management demonstration project.



Worm fences are erected on state game lands in small game territory and planted to berry and other food and cover producing trees, vines and shrubs for wildlife.

of old farms which are less evident in the acquisition of woodland or forest territory. For instance:

1. Higher prices per acre must be paid for farm lands than for woodland, and the prospects for returns from the sale of timber products are nil.
2. Much smaller contiguous acreages are available. It is not difficult to purchase areas of 100 and 200 acres in a majority of the counties, but so small an acreage accommodates only a very few hunters. Also, ordinarily, such small areas do not lend themselves to the same effective game management practices as areas of 500 acres or more.
3. Acquisition, administration, development, and management costs are much higher where many small areas are involved. Fewer and larger areas can be handled much more economically.

Economical and efficient management of State Game Lands is vital if the land purchase program is to continue to the extent apparently desired by sportsmen.

ABSTRACTING AND CONVEYANCING

A meticulous search is made of the title to each tract of land which the Commission agrees to purchase, and defects disclosed are corrected insofar as possible before settlement is made and the title conveyed to the Commonwealth. During the biennium titles for a total of 75,951.3 acres, involving 138 purchase contracts, were conveyed. Some of the titles had been examined during the previous biennium but were not conveyed, for one good reason or another, until this biennium. Similarly, many practically completed titles were pending at the end of this biennium which will be conveyed as soon as possible.

LAND SURVEYS

Miscellaneous engineering activities of the Commission have expanded greatly in recent years due largely to the more intensive management and development of lands purchased and leased, many projects requiring more than routine study.

The major portion of the field work was involved in surveying the boundary lines of the many tracts of land under contract for purchase. All lines and corners must be permanently located and marked on the ground. In addition to this, surveys were made of new refuges, sites for proposed dams, dikes, roads, telephone lines and fire lines to be constructed on State Game Lands.

One hundred and fifty-five tracts, for which contracts for purchase had been made, were surveyed. They were located in thirty-nine counties and comprised a total area of 77,436.5 acres. The total length of the survey lines amounted to 540.9 miles.

The bounds of seven Primary Refuges, located on as many State Game Lands, were surveyed. They comprised a total of 4,543 acres, with a boundary line length of twenty-nine and three-tenth miles. Fourteen and three-tenth miles of outside old boundary lines were re-surveyed for painting and tagging.

FOOD AND COVER DEVELOPMENT

The food and cover development work of the Commission has been given particular emphasis during recent years, and the major accomplishments in this field during the biennium are here briefly summarized. The work was accomplished with a minimum of cost to the Game Commission because of assistance rendered by the CCC, the WPA, and the NYA. This opportunity is taken to express grateful appreciation to these organizations and to the field personnel of the Commission for their splendid cooperation in this important undertaking.



Many plots are sown to game food mixtures on state game lands and on cooperative farm-game areas.

Because of budget limitations, food and cover improvement were confined to State Game Lands and Game Refuges. However, as a result of educational efforts by the Bureau of Refuges and Lands and officers in the field, considerable work of this kind was accomplished on privately-owned lands by sportsmen's organizations and individuals who were interested in providing wildlife with adequate food supplies and good cover.

FOOD PLOTS

During the planting season of 1937 approximately 500 acres, comprising more than 500 plots on State Game Lands, were planted to various kinds of cereals, nearly all in small game territory. In addition, arrangements were made with neighboring farmers for the planting of 174 acres on such lands on a share basis.

SPECIAL FOOD PLOT MIXTURE

After considerable experimentation, and with the assistance of Pennsylvania State College, a mixture of seeds, which it is believed will prove well adapted for game food plot planting in Pennsylvania, was worked out. The formula was announced in the spring of 1938 and by arrangements with seed houses, was made available to all persons interested. More than four tons of it were planted. The greater proportion was purchased and planted by sportsmen, although part of it was planted by the Commission on its Game Lands and Refuges.

The purpose of the new formula is to provide a continuous supply of game food from early fall until late winter. This is accomplished

by including in the mixture some species maturing early in the fall, and others which retain seeds on the stems until late in the winter. The mixture likewise contains certain species having strong stems which assist in holding up the weaker stemmed plants, thus providing support so necessary to keep the food above snow during severe winter weather.

NURSERY STOCK PLANTED

A total of 507,967 evergreen seedling trees also were planted on various tracts of State Game Lands to provide cover. These plantings were in clumps or strips and not in solid blocks as is customary for reforestation. In addition 221,610 game-food producing trees, shrubs and vines were raised in the State Forest Nursery at Mont Alto and in the Game Commission's Nursery near Beavertown and planted on State Game Lands. This material included bittersweet, Asiatic chestnut, Russian mulberry, Japanese rose, persimmon, frost grape, etc. More than 250,000 grapevine cuttings were also planted. The WPA and NYA assisted in transplanting thousands of additional shrubs and vines from privately owned lands where they were plentiful to State Game Lands and Refuges.

The NYA, during the biennium, gave splendid cooperation at the Beavertown Nursery by collecting and cleaning hundreds of pounds of seeds of game-food producing plants. They likewise cooperated splendidly in taking care of seedlings in the nursery during the summer



Thousands of game food producing trees, shrubs and vines are raised at the Game Commission's nursery at Beavertown, part of which is shown above.

months and by assisting in preparing seedlings for shipment. Their help made it possible to raise considerably more game-food producing plants than could have been provided otherwise.

RELEASE CUTTINGS

In order to improve food conditions on forest areas, a great many release cuttings were made in the vicinity of blackberry briars, grapevines, hawthorns, dogwoods and other game-food producing plants. These cutting operations included the removal of all competitive growth, thereby permitting sunlight to enter and stimulate the production of millions of game-food producing plants, shrubs and vines, and increase their yearly production. Sprouts from hardwood stumps furnished browse for deer and rabbits.

Such work produces results similar to the planting of clumps of game-food shrubs, berries and vines. A total of 3,825 acres of such release plot cuttings were made on 1,660 different plots on State Game Lands distributed throughout the Commonwealth. Much of this work was done by CCC camps and by WPA labor.

THINNING OPERATIONS

In addition to the release plots, thinnings were carried on over hundreds of acres of State Game Lands, thereby stimulating the growth of the remaining trees in the stand, and improving conditions for wildlife by promoting better seed crops and more undergrowth.

On State Game Lands in the northern part of the State, where there are areas containing considerable large timber, arrangements were made to sell some of the timber from areas where improvements were needed to better the game-food and cover supply. Sales were made from a great many different tracts and the total area cut over amounted to approximately 4,000 acres.

Such cutting opens up the crown canopy of the trees and encourages the growth of sprouts and ground vegetation essential as food and cover for wildlife. A timber sale agreement was made with each individual before cutting started. Arrangements were always made to leave standing sufficient desirable game-food producing trees, such as beech and wild cherry, den trees, and all food producing shrubs. Receipts for wood products from these sales between June 1, 1936, to May 31, 1938, amounted to almost \$9,000. However, the value is not alone in the dollars and cents received, but principally to wildlife as a result of its environmental improvements.

APPLE TREES PRUNED

On nearly all tracts of land there are a great many apple trees, either in old orchards or along tram grades and abandoned lumber camps. More than 36,000 of these and other fruit trees were pruned, largely through the aid of the NYA and the WPA. Such pruning increases the capacity of the trees to bear fruit. In addition to pruning,

a great many trees were released from competing growth. Pruned branches were piled near the trees to provide both food for deer and cover and food for rabbits. Practically all kinds of game feed on either the fruit, buds or bark of apple trees, which makes them among the most desirable of all game-food producers.

OTHER IMPROVEMENTS

A great many smaller food and cover development projects also were and are now being conducted. These include the collection of nuts and seeds, and the planting of them directly on Game Lands, and the transfer of many shrubs from privately-owned lands where they were plentiful to Game Lands. The WPA, NYA, and the CCC camps also made other cover improvements, such as brush heaps, log shelters, various kinds of feeding shelters, worm fences in the larger old abandoned fields, rough arbors, etc. On various traets bittersweet, as well as grapevine cuttings, were planted around roughly constructed arbors.

The Commission is anxious to have the State Game Lands developed into the very best possible habitats for wildlife. However, it takes funds to carry on a worthwhile program on more than one-half million acres of State Game Lands and Game Refuges. The Commission, therefore, was fortunate during the past biennium to have had a great deal of the labor handled by the CCC, the WPA, and the NYA. All of these organizations have done excellent work, but they will not always be available. Until the Commission is again thrown back on its own resourees, it will be possible to carry on the work with this minimum expenditure.

To stimulate more interest among sportsmen and others in food and cover development, several articles were prepared and published in the GAME NEWS. Bulletin No. 11 was revised and an additional 10,000 eopes printed—its fifth edition. Bulletin No. 16, dealing with farm practices as they affect wildlife, was also prepared and arrangements made for printing the first edition.

COOPERATIVE FARM-GAME PROGRAM

The Commission, early in 1936, inaugurated a Cooperative Farm-Game Program intended to improve hunting conditions in the more intensively cultivated and thickly populated sections of the State.

Eight counties were originally selected in which the program was applicable, but this was soon expanded to twenty-one, eleven in the southeastern section and ten in the southwestern section of the State, as follows:

<i>Southeastern Section</i>		<i>Southwestern Section</i>	
Chester	Lebanon	Allegheny	Butler
Delaware	Northampton	Washington	Indiana
Philadelphia	Lehigh	Greene	Westmoreland
Montgomery	Berks	Beaver	Fayette
Bucks	Dauphin (southern	Lawrence	Armstrong
Lancaster	half)		

While some work was conducted on the first project in Chester County before the beginning of the present biennium, the project was not completed until later. Accomplishments to the end of the biennium are indicated in Table No. 11, page 75.

A total of forty-one projects were arranged for in seventeen of the twenty-one counties. Agreements with the various cooperating farm owners and tenants vest only the hunting rights in the Commission. A total of 589 lease agreements were secured, only three of which were later cancelled.



An official of the Game Commission helps a landowner lay out and post a safety zone around his buildings.

Thirty-six of the forty-one projects were completely set up at the termination of the biennium. Within these thirty-six projects a total of 492 safety zones around buildings, comprising 9,393 acres, and 452 refuges, comprising 3,645 acres, were established. The combined acreage in refuges and safety zones amounted to 13,038.5 acres. The remaining area, 31,100.9 acres, is open to public hunting. One of the provisions of the program is that two-thirds or more of the leased acreage must be open to public hunting. Experience to date indicates that in the neighborhood of twenty-three per cent of the leased area comprises safety zones, which leaves only about ten per cent of the area available for game refuges. However, in most instances, the safety zones really constitute refuges. Safety zones are provided to protect the farmer, his family, and his livestock, but if he wishes to limit them or to permit hunting on them, he has the privilege of doing so. No one, however, is permitted to hunt within a game refuge.

AERIAL VIEW
OF A
PENNSYLVANIA COOPERATIVE
FARM-GAME PROJECT

1 - Circles indicate Safety Zones around buildings
2 - Cross hatching indicates Small Game Refuges
PENNSYLVANIA GAME COMMISSION



Aerial view of a Cooperative Farm-Game Project. Note legend at top right.

REACTIONS TO THE PLAN

During the small game hunting season of 1937 various members of the office staff of the Bureau of Refuges and Lands conducted a survey of established projects, and at the close of the season questionnaires were sent to cooperating farmers and sportsmen. The object of this survey was to determine the reaction of both farmers and hunters to the plan, and how satisfactorily it functioned. The investigation clearly indicated that a large majority of cooperating farmers were fully satisfied with the provisions of the plan and its operation under hunting pressure.

Most of the farmers reported that they were perfectly willing to recommend the plan to other farmers. It was evident that *the outstanding feature from the farmers' point of view was the protection the plan offered*. Very few prosecutions for violations of the game laws or special regulations governing the projects occurred. Every other feature which the plan presented seemed to be of minor consideration to them.

That the plan was closely observed by farmers in general, and that it appealed to them was evident, since shortly after the 1937 hunting season many of the adjoining farm owners, who had previously refused to cooperate, asked to do so.

The first big step in the program has been successfully negotiated. The idea has been sold to innumerable farmers and sportsmen. The big job facing the Commission now is that of development and management of the various projects. The two principal items of concern in this connection are to what extent farmers and sportsmen will cooperate in making environmental improvements, and whether the cost of development, management and protection will be within reasonable limits.

COSTS OF OPERATION

The Commission allotted \$50,000 for each year of the biennium, but in neither year was that amount expended. The total expenditures classified by operations were as follows:

	Amount	% of Total	Projects Involved No.	Acres	Average Cost per Acre
Securing leases and mapping project areas.....	\$7,326.61	18.8	41	47,679.4	1.8c.
Establishing the projects..	22,261.44	57.3	36	44,139.4	5.7c.
Protection	4,820.16	12.4	36	44,139.4	11.0c.
Development and maintenance	4,440.46	11.5	36	44,139.4	10.5c.
Totals	\$38,848.67				29.0c.

The above does not include a certain amount representing overhead expenditures, but does cover all field expenditures. The program is more or less in its infancy, so average per-acre costs to date are naturally high.

Efforts to improve environmental conditions within the various project areas was limited largely to sowing grain food plots, and the purchase of standing grain from cooperating farmers. Expenditures for development and maintenance comprised eleven and five-tenth per cent of the total expenditures. Including only the projects on which the expenditures for these purposes were made, the average cost was ten and five-tenth cents per project-acre per year.

The total average cost of the program (about twenty-nine cents per project-acre per year) is frankly higher than may appear warranted. It is hoped, however, that this can be somewhat reduced over a period of years, but indications are these operating costs will not be higher than they would be if the Commission purchased similar lands for small game.



Refuge Keeper's Headquarters at the Pymatuning Waterfowl Refuge, near Linesville, Crawford County.

THE PYMATUNING REFUGE

The Pymatuning State Game Refuge, on the upper dam of the Pymatuning Reservoir in Crawford County, south of Linesville, was established in 1935. It is proving decidedly successful as a feeding, resting, and nesting area for wild waterfowl. The refuge contains 3,670 acres of which approximately 2,500 acres are submerged and well stocked with aquatic and marsh food plants. A large proportion of the remaining 1,170 acres is open ground suitable for upland game.

All possible efforts were exerted to increase the amount of desirable duck and other migratory bird foods. The United States Bureau of Biological Survey cooperated splendidly in this connection by offering

expert advice and arranging for some planting material. Almost \$1,000 was spent in purchasing aquatic and semi-aquatic plants. Fifty pounds of wild rice seed, 300 pounds wild duck millet, 100 pounds smart weed, and 300 pounds of wampee seeds also were purchased. In addition to the material purchased, thousands of small water plants were transplanted from other nearby areas where they were abundant. This included 44,000 wild celery plants and 8,000 sago pond weed plants transplanted from Conneaut Lake. Grains of various kinds also were planted on the tillable areas included within the refuge.

Between fifty and seventy-five acres of grain was harvested annually and used for winter feeding at the refuge and in several adjoining counties. During 1937 the Refuge Keeper harvested approximately 960 bushels of ear corn, 62,000 pounds of mixed grain, forty-five bushels of wheat, forty bushels of buckwheat, and thirty-five bushels of duck wheat. Of this amount 280 bushels of ear corn and 5,400 pounds of mixed grain were used for winter feeding in Crawford, Mercer, Erie and Venango counties. The remainder, with the exception of a quantity retained for seeding the following year, was used for feeding in and near the refuge.

During the winter of 1936-1937 it became necessary to reduce the number of muskrats in the refuge to prevent the destruction of large quantities of aquatic plants needed for food by wild waterfowl. A total of 1,319 muskrats were trapped and pelted, for which the Commission received \$2,060.45. No trapping was done during the winter of 1937-1938.

The Pymatuning refuge has developed into an excellent breeding area for certain species of upland game because of the abundance of food and natural cover. Ringneck pheasants and rabbits are becoming particularly abundant and will furnish a source of supply for restocking other areas in the future. Even as early as the spring of 1938 an excess of rabbits was evident and about 500 were trapped for restocking in other parts of Crawford County.

Public entry into the refuge is prohibited to prevent needless disturbance to nesting waterfowl and other migratory and upland game species.

Early in the biennium the Commission authorized the construction of a museum on the area in which to exhibit mounted specimens of wild waterfowl and other migratory birds. Construction was started in 1937 and practically completed at the end of the biennium. Ample parking space and toilet facilities are being provided, and this educational museum and the waterfowl usually in evidence, especially during the spring and fall migrations, will attract thousands of visitors annually.

FOREST FIRES

Field personnel of the Commission devoted considerable time in cooperating with the Department of Forest and Waters in extinguishing forest fires. Lands in which the Commission is particularly interested which were damaged by forest fires were:

State Game Lands.....	2815 Acres
Primary State Game Refuges.....	274 Acres
Auxiliary State Game Refuges.....	15 Acres

ROAD REPAIRS, REFUGE LINES, ETC.

All Game Refuges are surrounded by brushed-out lines six to ten feet in width, which are mowed annually, and by a single strand of No. 9 wire. These lines total approximately 1,000 miles in length. To provide further protection and to make the Game Lands and Refuges more accessible for management and administrative purposes, roads and trails are built. All such roads are closed except to representatives of conservation or police agencies when on official business. Outside boundary lines of State Game Lands, wherever they are essential in providing forest fire protection, are brushed out to a width of about four feet.

In addition to the work which Game Refuge Keepers were able to do in maintaining roads, mowing refuge lines, fire trails, etc., relief agencies such as WPA, NYA, etc., assisted in walling up springs, mowing boundary lines, establishing refuges, cutting fire trails, building game feeding shelters, clearing patches on which to plant game food, etc.

A dam which was started during the previous biennium was completed on State Game Lands No. 56 in Bucks County. It covers an area of approximately thirty-seven acres, and provides an excellent place for fish as well as a nesting and resting place for wild waterfowl.

Two of the four CCC camps which remained to carry on work on the larger tracts of State Game Lands were discontinued during the biennium. The two remaining camps were located on State Game Lands No. 44 in Elk County and No. 12 in Bradford County. The CCC camps have done an excellent job in making game lands more accessible for administration and protection purposes through the building of roads and trails.

FIXED CHARGES

Commonwealth owned property is not subject to taxation, but to avoid hardships on counties and to township roads and schools statutory fixed charges are paid on State Game Lands in lieu of taxes. These fixed charges amounted to \$52,643.79 during this biennium.

ARCHERY PRESERVES

The Legislature in 1937 authorized the Commission to set aside and maintain not to exceed two Archery Hunting Preserves for the use of bows and arrows only, and to adopt and enforce such rules and regulations as it deemed advisable for the proper government and use thereof. One of these preserves was established on State Game Lands No. 13 in Davidson Township, Sullivan County, the other on the Allegheny National Forest in Hickory Township, Forest County.

Both are well posted and surrounded by a well-defined brushed line and marked with a single strand of No. 9 wire. A special permit at a fee of \$2 is required to hunt with the bow and arrow on these preserves.

DOG TRAINING PRESERVES

The Legislature in 1937 also authorized the Commission to set aside and maintain training preserves for dogs, and to adopt and enforce rules and regulations for the proper government and use thereof.

As a result, a Retriever Training Preserve was established in October, 1937, on 160 acres belonging to Mr. and Mrs. Robert McLean in Upper Dublin Township, Montgomery County, and a Bird Dog Training Preserve of 990 acres was established in October, 1937, on lands of the Armstrong Forest Company in Ridgway Township, Elk County.



Each year more and more hunters are becoming archery minded. Two special archery preserves have been established for these modern Robin Hoods.



Thousands of game birds are stocked annually in depleted coverts. Here imported Hungarian Partridges are being released.

GAME RESEARCH AND DISTRIBUTION

Up until a few years ago little or no wildlife research was carried on in Pennsylvania. However, just prior to the opening of this bien-nium the Commission decided to enter into the research field more extensively and established a separate Division to carry on that work and to administer the game distribution program. Since the Division's functions are concerned with two entirely different though closely related activities, each will be considered separately.

RESEARCH

Shortly following the creation of the Division, a long-time research program was inaugurated. Its major objectives have been hardly more than entered upon, but already certain projects have been completed with extremely gratifying results. Reports on various phases of the work have been printed in the Pennsylvania Game News and various other wildlife publications. A brief summary of those investigations recently completed, together with outlines of projects presently active, is given below:

(1) A detailed study of the history, operation, cost and effects of the Commission's bounty system was undertaken and completed late in 1936. A full report on the investigation was published as Research Bulletin No. 1, entitled "The Pennsylvania Bounty System."



Controlled Shooting Areas have been established in certain parts of the Commonwealth to test the game productivity of properly managed areas.

(2) The effects of the Commission's past rabbit management activities were carefully studied and reported upon. This resulted in the adoption of a new rabbit program embracing numerous special wild propagating areas and large-scale live-trapping and redistribution activities. An article outlining the findings and announcing the new program appeared in the Game News, while a brief report on the first year's activities will be found in another section of this report.

(3) The mechanics of winter deer losses were minutely studied in their relations each to the other. A detailed discussion of the findings was printed in the Game News.

(4) Investigations designed to determine the effects of various climatic conditions upon the body weight and daily food consumption of deer were completed in April, 1938. The findings are at present being prepared for immediate publication.

(5) In cooperation with the School of Forestry and Conservation of the University of Michigan, a comparative study of the physiological characteristics common to different strains of wild turkeys was completed. A short technical bulletin covering the subject is in preparation.

(6) A comprehensive study of the wild turkey in its native haunts also will shortly appear in printed form.

(7) A large-scale bird banding and mammal tagging program has been carried through two years' operation with many interesting and important facts already brought to light by it. A progress report on the project was presented at the Third North American Wildlife Conference, held at Baltimore, Maryland, in February, 1938.

(8) The establishment of several controlled shooting areas was undertaken in 1936. The projects are designed to throw some light on the annual production of game on representative land areas. A progress report covering the operation of three units was also delivered at the Wildlife Conference.

(9) In 1937 plans were laid for the undertaking of comprehensive research studies concerning the effects of changing climatic conditions upon game birds and mammals. This work has necessitated the construction of certain rather complicated laboratory apparatus wherein any desired climatic conditions may be reproduced with reasonable accuracy. The equipment simultaneously allows for the mechanical recording of the activity of the experimental animals when subjected to the various climatic changes.

Cooperative Unit Established—Late in 1937 the Commisison entered into an agreement with The Pennsylvania State College and the United States Department of Agriculture, Bureau of Biological Survey, covering the establishment of a cooperative research unit.



Banding and releasing a chukar partridge. All game birds are banded to check their movements.

Known as the Pennsylvania Cooperative Wildlife Research Unit, the project headquarters are located at State College. It is jointly financed by the three cooperating agencies and its aim is toward the solution of certain current wildlife problems and toward the development of a greater knowledge of the biology of the various game species.

The first stages of work were inaugurated in March, 1938. As yet the detailed program has been barely more than outlined, but the results obtained from the proposed studies should eventually prove of great practical value to the Commission in its task of administering the game resources of the Commonwealth, and be of considerable aid to the nation-wide game restoration movement.

DISTRIBUTION OF GAME

During the biennium the Commission's restocking activities have been greatly increased. More mature birds have been produced on the State Game Farms, larger game purchases have been made, while live-trapping and redistribution activities have been greatly enlarged. This was done to help offset the adverse effects of the winter of 1935-36, to encourage game breeding within the Commonwealth, and to supplant the anticipated elimination of certain supply sources. A summary of the activities is given below:

Game Purchases—During the biennium the Commission expended for the purchase of game a total of \$147,265.34.

The following game birds and animals were purchased for release:

<i>Species</i>	<i>Fiscal Year 1936-37</i>		<i>Fiscal Year 1937-38</i>	
	<i>Number</i>	<i>Cost</i>	<i>Number</i>	<i>Cost</i>
Cottontail Rabbits	73,729	\$38,339.20	59,122	\$31,129.44
Ringneck Pheasants	14,254	29,887.50	5,275	13,066.20
Bobwhite Quail	60	150.00	480	1,110.25
Hungarian Partridges	2,343	8,127.00	6,607	22,673.25
Chukar Partridges	369	1,750.00	156	659.50
Fox Squirrel	104	130.00	....	....
Geese	30	176.00	....	....
Raccoons	14	67.00	....	....
Totals	90,903	\$78,626.70	71,640	\$68,638.64

The eggs and game listed below were purchased and used for propagating purposes at the State Game Farms:

<i>Species</i>	<i>Fiscal Year 1936-37</i>		<i>Fiscal Year 1937-38</i>	
	<i>Number</i>	<i>Cost</i>	<i>Number</i>	<i>Cost</i>
Chukar Partridges	10	\$40.00	5	\$22.50
Ruffed Grouse	48	360.00	....	....
Hungarian Partridges ....	....	....	52	175.50
Chinese Pheasants .....	....	....	238	562.50
Totals	58	\$400.00	295	\$760.50
<i>Eggs</i>				
Chukar Partridges	50	\$25.00		
Mongolian Pheasants	100	35.00		
Totals	150	\$60.00		

Express costs on purchased game amounted to \$32,492.76, the total for 1936-37 being \$18,006.35, while that for 1937-38 was \$14,486.41.

Live-Trapping of Wild Game—As in the past, wild game was in many instances live-trapped on areas closed to hunting and later released in open shooting territory. The numbers of the various species so trapped and released are shown below:

<i>Species</i>	<i>Fiscal Year 1936-37</i>	<i>Fiscal Year 1937-38</i>
Cottontail Rabbits	719	5,853
Ringneck Pheasants	246	517
Grey Squirrels	461	644
Raccoons	4	...
Bobwhite Quail	7	6
Mallard Ducks	13	...
Totals	1,450	7,020

Total Game Releases—Below is listed, as to sources, the species of game released within the Commonwealth during the biennium:

<i>Fiscal Year 1936-37</i>				
<i>Species</i>	<i>Game Farms</i>	<i>Purchased</i>	<i>Trapped</i>	<i>Total</i>
Cottontail Rabbits	4	73,729	719	74,452
Ringneck Pheasants.....	33,137	14,254	246	47,637
Bobwhite Quail	8,439	60	7	8,506
Wild Turkeys	2,638	....	....	2,638
Hungarian Partridges	195	2,343	....	2,538
Chukar Partridges .....	....	369	....	369
Fox Squirrels	1	104	....	105
Canadian Geese .....	....	30	....	30
Mallard Ducks	578	....	13	591
Raccoons	12	14	4	30
Reeves Pheasants	162	....	....	162
Grey Squirrels .....	....	....	461	461
Totals	45,166	90,903	1,450	137,519

<i>Fiscal Year 1937-38</i>				
<i>Species</i>	<i>Game Farms</i>	<i>Purchased</i>	<i>Trapped</i>	<i>Total</i>
Cottontail Rabbits .....	....	59,122	5,853	64,975
Ringneck Pheasants	43,193	5,275	517	48,985
Bobwhite Quail	13,255	480	6	13,741
Wild Turkeys	2,343	....	....	2,343
Hungarian Partridges	179	6,607	....	6,786
Chukar Partridges	165	156	....	321
Grey Squirrels	4	....	644	648
Mallard Ducks	177	....	....	177
Raccoons	20	....	....	20
Totals	59,336	71,640	7,020	137,996*

In addition to these figures, 864 pheasants and seventy-five mallard ducks, obtained under the terms of regulated shooting grounds permits issued throughout the Commonwealth, were released during the fiscal year of 1937-38. Also fifty pheasants were purchased under the agreement with landowners on Farm-Game Cooperative Projects and released thereon.

* Exclusive of 864 ringneck pheasants and 75 Mallard ducks turned over to the Game Commission by holders of Regulated Shooting Grounds Permits for stocking purposes, as required by law, and 50 ringneck pheasants propagated and released on cooperative farm game projects.



Sportsmen's organizations help restock depleted areas by trapping rabbits off land where no hunting is permitted and releasing them where public hunting is allowed.



Lectures and motion pictures are presented in the public schools throughout the school year.

EDUCATION

Education continues to play an important part in our wildlife program, and the demand for such material, visual and otherwise, made it necessary for the Commission to expand this phase of its activities considerably.

PUBLIC RELATIONS

As usual, the demand for lecture service was so great that it was impossible to meet it. The recorded number of educational meetings attended by all personnel of the Department from the Commissioners on down to the members of the field organization numbered 7,065, and the total number of persons so reached was 1,055,011. The number in each case was triple that of any other biennium. Meetings attended by the office staff totaled 303, reaching an audience of 60,200. Those attended by field officers totaled 5,959, reaching 866,526, while the traveling lecturer, who attended at least two meetings a day on the average, visited 803 places and reached 128,285 persons. Of all meetings, sportsmen's organizations totaled well over fifty per cent, schools twenty per cent, and miscellaneous meetings, including Scouts, 4-H clubs, bird clubs, service clubs, etc., thirty per cent.

Special efforts were made to interest Boy Scouts and 4-H clubs to adopt and carry on a well-rounded program of wildlife conservation locally, with unusual success. More stress was laid upon wildlife



Thousands of colored posters are prepared and distributed annually.

conservation in the schools than ever before, and the possibility that a study of our natural resources will soon become an important part of every school curriculum is almost certain.

MOTION PICTURES

The motion picture program was stressed particularly and ten new films depicting interesting activities of the Commission were prepared and distributed widely throughout the Commonwealth. The titles of these pictures and a brief resume of their contents follow. Some of them are still available in both sixteen and thirty-five millimeter size, for distribution to those who have not had the privilege of seeing them.

Farm Game (2 reels)—An explanation of the system employed in the development and maintenance of the new Farm-Game program.

A Day Behind the Beagles (1 reel)—A real rabbit hunt with two real enthusiasts.

Raising Ringneck Pheasants (1 reel)—Detailed workings of the State Game Farms, where the story of pheasant propagation is unfolded before your eyes.

Quail and Turkey Propagation (1 reel)—The inside story of the quail and turkey propagation activities of the Pennsylvania Game Commission.

Huns and Chukars in Pennsylvania (1 reel)—A brief but enlightening history of the Game Commission's experiments in introducing two "foreign gamesters" to the Keystone State.

Intimate Views of Pennsylvania Birdlife (1 reel)—An unusual collection of songbird portraits, highly educational.

Winter Feeding (1 reel)—An abbreviated story of the care of game during the winter months.

Wildlife Shots at Random (1 reel)—A miscellaneous collection of game animals and their activities.

Woodland Orphans (1 reel)—Intimate pictures portraying the unfortunate results when woodland youngsters are removed from the wild.

The primary distribution of these films was made by the traveling lecturer. Supplemental distribution was made by the office staff and various Commissioners and supervisors who were eager to conduct educational campaigns in their respective regions.

STILL PICTURES

Several thousand still photos also were added to the files to be used as illustrations for the Game News, various bulletins and pamphlets, magazine articles, newspaper mat service, etc.

POSTERS

Through a WPA Art Project a very extensive poster campaign was conducted, which resulted in the wide distribution of eleven different kinds of from two- to six-color placards on various subjects. Quite a few of them are still available for those who will display them carefully and properly. In subject material they deal with Game and Bird Protection, Safe Handling of Firearms, Forest Fire Prevention, etc.

EXHIBITS

Popular exhibits also were prepared and displayed at various places, including the Pennsylvania Farm Show, Harrisburg; The Philadelphia Sportsmen's and Motorboat Show, Philadelphia; and The Baltimore Outdoor Life Show, which was held in conjunction with the North American Wildlife Conference. This latter exhibit, jointly contributed by the Department of Forests and Waters, the Fish Commission, and the Game Commission, received nationwide comment and proved tre-



Poster campaigns help to make the public more conservation-minded.

mendously popular. Other minor exhibits of a portable type were also furnished sportsmen's associations for one and two day set-ups, the number totaling well over fifty.

PUBLICATIONS

Work was started on several interesting bulletins, hoping to complete them during the biennium, but unfortunately their completion was delayed due to the stress of other important matters, so they did not appear until after the publication of this report. However, the basic research and manuscript preparation in each case should rightly be credited to the major activities of the biennium.

The circulation of the PENNSYLVANIA GAME NEWS, regular monthly magazine of the Commission, increased by leaps and bounds, and at the close of business May 31, 1938, there were over 25,000 subscribers to this publication, as compared to 5,000 subscriptions on record at the close of the previous biennium. A special number issued to every licensed hunter in October, 1937, was largely responsible for this tremendous increase, but the efforts of sportsmen's associations and the Commission's field staff in promoting it also helped materially. County Treasurers and other official license agents also deserve much credit for helping to increase the circulation of the magazine.

Comprehensive newspaper and radio programs were conducted during seasonal activities, and spot news was released as emergencies arose. The Commission is grateful to these agencies for their wholehearted support. Various feature articles also were prepared for national and other state periodicals.



Large signs like these warn motorists of dangerous deer crossings.



Hunters are constantly urged to handle their guns more carefully.

ADMINISTRATION

HUNTING ACCIDENTS

Despite repeated warnings and aggressive campaigns, all too many hunters are careless with firearms annually. The past two years were no exception, and records show that sixty-eight fatal and 495 non-fatal accidents occurred. On the basis of a fourteen-year summary (1924 to 1937 inclusive) of hunting accidents, the average fatal accidents per year were forty-eight. During the past biennium the yearly average was only thirty-four, a decrease to which all hunters may point with justifiable pride. The non-fatal accidents for this period were the lowest since the 1928-29 biennium, although they were higher during the fourteen-year period (1924 to 1937), the yearly average being 249.

Under a new law passed in 1937, hunting accidents, regardless of the nature of the injury, must be reported within seventy-two hours under penalty. As a result many minor accidents never reported before increased the figures on non-fatalities for that year considerably.

The Commission is now armed with the most effective laws for punishing the careless hunter, and many hearings were held in connection with hunting accidents and a number of hunters' licenses were

revoked in some of the most serious cases. Heavy fines also were imposed.

The trend in hunting accidents during the past seven years is as follows:

<i>Self-Inflicted</i>	1931	1932	1933	1934	1935	1936	1937
Fatal	30	18	12	11	25	15	24
Non-fatal	97	83	55	55	54	47	59
<i>Inflicted by Others</i>							
Fatal	42	36	19	17	30	8	21
Non-Fatal	270	192	197	199	198	112	277
Totals	439	329	283	282	307	182	381

There were eighteen fatal accidents during the 1937 season while hunting deer, and the dates on which they occurred are as follows:

DEER HUNTING ACCIDENTS

	1936		1937	
	<i>Fatal</i>	<i>Non-Fatal</i>	<i>Fatal</i>	<i>Non-Fatal</i>
First Day	2	6	3	7
Second Day	1	1	2	6
Third Day	1	2	0	3
Fourth Day	1	2	1	3
Fifth Day	1	5	3	1
Sixth Day	0	2	5	1
Seventh Day	0	1	1	1
Eighth Day	0	0	0	2
Ninth Day	0	0	0	1
Tenth Day	0	0	0	0
Eleventh Day	0	0	0	2
Twelfth Day	1	0	2	0
Totals	7	19	17	27

The information collected during this biennium on the value of wearing red as a safety feature—giving your brother hunter a chance to spare your life—confirms the statements on this subject made heretofore, namely, that this growing practice among sportsmen pays big dividends. The Commission, therefore, unhesitatingly commends the wearing of bright red to each and every hunter.

GAME KILLED IN PENNSYLVANIA

Considering the fact that the ravages of the winter of 1935-1936 took a heavy toll of the small upland game, from which it has not yet fully recovered, the kill for the past two years was very satisfactory, even though it was necessary to reduce seasons and limits for certain species. The kill is reported in the following tabulation:



This enthusiastic young nimrod is about to add another unsuspecting gray squirrel to his bag.

Kind	Weight of Each	Season of 1936 (Final)		Season of 1937 (Preliminary)	
		Number	Weight	Number	Weight
Deer, legal males -----	115 lbs.	18,084	2,079,660 lbs.	39,347	4,324,905 lbs.
Bears -----	175 lbs.	356	62,300 lbs.	537	93,975 lbs.
Rabbits -----	13 $\frac{1}{4}$ lbs.	1,338,892	2,843,061 lbs.	3,074,820	5,380,935 lbs.
Hares (Snowshoes) -----	3 lbs.	—	—	2,420	7,260 lbs.
Squirrels -----	1 lb.	373,785	373,785 lbs.	1,056,408	1,056,408 lbs.
Raccoons -----	10 lbs.	34,736	347,360 lbs.	29,842	298,420 lbs.
Wild Turkeys -----	10 lbs.	3,208	32,080 lbs.	6,619	66,190 lbs.
Ruffed Grouse -----	14 $\frac{1}{2}$ lbs.	96,909	129,212 lbs.	177,683	236,911 lbs.
Ringneck Pheasants -----	23 $\frac{1}{4}$ lbs.	267,890	736,698 lbs.	371,526	1,021,697 lbs.
Quail -----	6 ozs.	42,095	15,186 lbs.	105,798	39,674 lbs.
Woodcock -----	6 ozs.	25,455	9,546 lbs.	57,244	21,467 lbs.
Shorebirds -----	4 ozs.	17,407	4,352 lbs.	12,657	3,164 lbs.
Blackbirds -----	21 $\frac{1}{2}$ ozs.	60,245	9,413 lbs.	78,543	12,272 lbs.
Wild Waterfowl -----	21 $\frac{1}{2}$ lbs.	27,546	68,865 lbs.	16,758	41,895 lbs.
Total weight -----			6,212,118 lbs.		12,805,173 lbs.
Reduced to tons, equals -----			3,106 tons		6,403 tons

Prior to 1937 the game kill was based on estimates made by field officers which were later supplemented by tabulations of 10,000 or more reports selected at random to assure a cross section of the Commonwealth. At that time it was impossible to arrive at an estimate in any other manner because only a limited number of hunters sent in their reports.

However, the new game code, approved June 3, 1937, amended that section of law making the report mandatory under a \$2 penalty. As a result, 419,357 hunters voluntarily sent in their reports and 186,914 failed to do so. Notices were then mailed to the tardy individuals in order to give them an opportunity to cooperate in this first attempt to obtain a complete tabulation. A very generous response was the result. However, at the close of the biennium approximately 43,000 reports had not yet been received and field investigations were ordered.

The 1937 game kill is based on the tabulation of 562,696 reports, or ninety-three per cent of the licenses sold. However, it is expected that additional reports will come in from time to time thereby further increasing the kill herein recorded.

For a number of years there existed a feeling on the part of some persons that the Commission's estimates were too high, while others took the position that it was entirely too conservative. However, the 1937 tabulation proves conclusively that the estimated game kill over a period of years has been from thirty to sixty per cent *below* the actual kill, assuming, of course, that the same average would apply to other years. This explains why the 1937 kill, for many species, is so much in excess of that of 1936 and previous years.

SPECIAL DEER PERMITS

The Commission, firmly convinced after exhaustive research that deer were too numerous for their available food supply, declared an open season for killing antlerless deer from November 25 to November 27, 1937, with special control permits costing \$2 each. This permit was necessary in addition to the regular resident or non-resident hunter's license. Of the 62,250 permits authorized in fifty-four counties, 53,192 were issued. However, a permanent injunction granted by the Dauphin County Court, due to legal technicalities, halted the special season and all special deer permit fees were refunded, the last checks being mailed January 13, 1938. The cost of issuing the permits and refunding the fees amounted to \$16,971.08.

It is believed that the sportsmen generally, and especially those who so vigorously opposed the special season, are now convinced that a reduction of the herd is highly essential to its well being, and that because of the delay other game, as well as the deer herd, has suffered considerably.

SPECIAL GAME PERMITS

The law concerning special licenses was amended on June 3, 1937, to authorize the issuance of new special permits covering Regulated Shooting Grounds, Retriever Trials, Fox Hunting Clubs, Fur Dealer Employes', and Archery Preserves.

The table below gives the number of special permits issued during the biennium:

	Taxi- dermist	Ferret Owners	Ferret Breeder's	Pro-pa- gating	Field Trial	Retriever Trial	Col- lecting
1936-37 -----	207	47	3	321	30	—	24
1937-38 -----	198	13	1	192	20	2	12
	Fur- Farming	Fur Dealers	Fur- Dealer Employees	Regulated Shooting Grounds	Roadside Menageries	Fox Hunting Clubs	Archery Preserves
1936-37 -----	58	584	—	—	52	—	—
1937-38 -----	69	486	65	11	49	23	44

HUNTING LICENSES

The Department of Revenue, in accordance with an Act of General Assembly, continues to direct the issuance of hunting licenses, including settlement of accounts with the issuing agents and the transmission of funds arising from this source to the State Treasury for deposit to the credit of the Game Fund.

The bulk of the Commission's revenue, as disclosed by the State-ments of Revenue and Disbursements hereinafter appended, is derived



from the sale of hunting licenses. The number of licenses issued during the past five years is given below:

<i>Year</i>	<i>Resident</i>	<i>Non-Resident</i>	<i>Alien Non-Resident</i>
1933	524,337	4,966	0
1934	568,666	6,024	0
1935	606,469	8,460	0
1936	534,573	7,124	2
1937*	597,904	8,367	0

According to tabulations made by the Department of Revenue, 7,122 non-residents from thirty states were issued licenses during 1936 as follows: (Those issued in 1935 numbered 8,460, and are indicated in parenthesis.) Ohio, 2,570 (3,151); New York, 2,359 (2,864); New Jersey, 995 (1,168); West Virginia, 360 (376); Maryland, 287 (306); Indiana, 162 (165); Delaware, 73 (76); Illinois, 69 (75); District of Columbia, 64 (58); Connecticut, 42 (31); Virginia, 36 (76); Kentucky, 25 (23); Massachusetts, 22 (23); Michigan, 17 (14); Rhode Island, 7 (6); Iowa, 6 (10); Tennessee, 5 (5); Kansas, 4 (5); Nebraska, 3 (0); North Carolina, 3 (5); Florida, 2 (0); South Carolina, 2 (1); Oregon, 2 (1); Wisconsin, 1 (0); Oklahoma, 1 (1); New Hampshire, 1 (2); California, 1 (1); Colorado, 1 (0); Vermont, 1 ((1); Alabama, 1 (0); Louisiana, 0 (1); Missouri, 0 (14); and Utah, 0 (1).

NEW LICENSE ADOPTED

After giving careful study to a revised hunter's license that would meet the requirements of the sportsmen, the Commission in 1936 designed and adopted a new and improved form of license combining in one composite unit the license, game-kill report and big game tag in two parts. The advantages in the use of the new license are set forth below:

(1) Provides each and every hunter with a uniform tag for tagging big game as required by law. Previous to this biennium the hunter was compelled to write to the Commission for a tag or depend upon agencies furnishing such tags as an advertising medium, or make an improvised tag.

(2) By furnishing as part of the license a mailable self-addressed game-kill report, the hunter is certain to have the report in his possession at the end of the season and in position to complete it and mail to the Commission for one cent instead of three cents, as heretofore required.

(3) The composite license precludes the possibility of misplacing the game-kill report and big game tag, which would occur in many cases if they were furnished as units separate and apart from the license.

(4) The new license provides an avenue for making available certain important information which each and every hunter should know before going afield.

* Based on preliminary reports to June 30, 1937, subject to slight change.



The Great Horned Owl is destructive to wildlife wherever he is too abundant.

PREDATOR CONTROL

BOUNTY PAYMENTS

The control of predators is an essential part of any wildlife conservation program, no matter how regulated. In Pennsylvania to date the bounty system has been the chief factor in governing this control. Under this system bounties were paid during the first sixteen months of the biennium at the rates which were in effect during the previous biennium, namely: wildcats, \$15; gray foxes, \$4; weasels, \$1, and goshawks killed between November 1 and May 1 of the following year, \$5.

The Commission, acting under powers and authority vested in it by the new game code approved June 3, 1937, passed a resolution

establishing all bounty claims received on or after October 1, 1937, as follows: wildcat, no bounty; gray fox, \$4 as before; weasel, fifty cents; goshawk and great-horned owl killed between November 1 and May 31 of the following year, \$2; goshawk and great-horned owl fledglings killed between November 1 and May 31 of the following year, \$1.

During the first four months of the 1937-1938 fiscal year while the \$1 bounty on the weasel was still in effect, there was a reduction of approximately fifty per cent in the number of weasel claims, as compared with the same four months of the previous year. This indicates that the weasel population had been materially reduced, and that the change in the bounty rate was not entirely responsible for the reduction in the number of weasels presented for bounty during the remaining months of the fiscal year of 1937-38.

Economic as well as climatic conditions play an important part in the control of predators. An advance in the prices of raw furs, and an ideal trapping season during the winter of 1936-1937, encouraged trappers to operate more extensively, consequently a large kill of both fur-bearing animals and predators was made.

A statement of bounty paid during the last two fiscal years is as follows:

	<i>1936-37</i>	<i>1937-38</i>
Wildcats	131	3
Gray Foxes	9,790	8,919
Weasels	80,843	29,200
Goshawks	1,080	144
Great-horned owls .....	....	675
Great-horned owl fledglings .....	....	76
Amount of money paid	\$127,368.00	\$54,657.50

The annual bounty payments during the previous biennium were:

<i>1934-35</i>	<i>1935-36</i>
\$114,647	\$116,289

Sometimes attempts are made to collect bounty fraudulently, and it is not unusual for some person to send in mice or shrews for weasels, or house cats for wildcats. Also individuals who think they are clever gather up pelts in other states and try to probate them in Pennsylvania, but the majority of them are caught. During the past two years 177 suspicious bounty claims were investigated, resulting in the collection of \$6,500 in fines, one suspended case, and one case pending in court.

Forty-nine claims were rejected, but no penalties were imposed because of extreme poverty in some cases, and because a great many of them were made by mere boys.

FUR-BEARERS

Pennsylvania is rich in fur-bearers, and at times the annual crop has exceeded \$2,000,000. Licensed fur dealers purchased 1,088,840 pelts from Pennsylvania trappers during the year 1936-1937. This number represents about eighty per cent of the total catch. A tabulation of this number by species is given below:

<i>Animals</i>	<i>Numbers</i>	<i>Amounts Paid</i>
Muskrat	579,757	\$ 858,987.13
Skunk	341,382	353,683.99
Mink	10,073	94,850.95
Opossum	71,427	22,269.90
Beaver	1,036	14,615.20
Raccoon	25,484	97,472.53
Weasel	48,357	24,862.34
Red Fox	5,115	21,723.49
Gray Fox	6,171	10,386.83
Wild Cat	38	42.00
Totals	1,088,840	\$1,498,894.36



From \$1,500,000 to \$2,000,000 are paid to Pennsylvania's trappers annually.

The other twenty per cent, according to information obtained from various sources, was shipped by trappers direct to fur houses outside of the State.

Through careful protection it has been possible at times to take a fair sized crop of beavers. During a State-wide beaver season from March 1, 1937, to March 15, 1937, trappers caught 1,222 of these animals. A total of 541 also were taken in the eighteen counties which were open to the trapping of these animals from February 15, 1938, to February 28, 1938.



Through proper protection beavers, once exterminated in Pennsylvania, are again abundant in many forested areas.

FINANCIAL OPERATIONS

The Commission receives many requests for information on the condition of the Game Fund and how the sportsman's dollar is spent. Such information is given in tabular and simple graphic form, Tables 1, 2, 3 and 4 on the following pages in this report.

During the first year the sum of \$1,220,201.80 was credited to the Game Fund, and during the second year the revenue amounted to \$1,371,250.43 (excluding \$106,378.00, fees paid for special deer permits, which were subsequently refunded), or a total of \$2,591,452.23 for the biennium. While the revenue credited during the second year of the biennium establishes the highest record in the history of the

Commission, it takes third place as a biennium, the record being \$2,667,813.84 for the two-year period ending May 31, 1932.

Expenditures during the first year of the biennium amounted to \$1,340,811.35 and the second year \$1,448,994.32 (excluding \$106,378.00 refunded fees for special deer permits), or a total of \$2,789,806.17 for the biennium. Expenditures for the biennium establish the highest record for any previous biennium or fiscal year periods. The biennium record prior to this was \$2,545,337.34 for the two-year period ending May 31, 1932.

During the biennium the Commission continued its established policy of operating well within its income, and had on hand at the end of each fiscal year a balance sufficiently large to cover the operating expenses of the Department until the revenue for the current year became available.

Although the Commission has initiated new programs in keeping with present-day conservation needs, this policy has been adhered to notwithstanding the fact that it was unable to expand certain activities as extensively and as rapidly as many sportsmen have desired.

The Commission, in addition to its annual operating requirements, has over a period of years made capital investments aggregating \$3,376,019.95, the details of which, excluding obsolete equipment disposed of, appear below:

	<i>Capital Expenditures</i>
State Game Lands	\$2,693,061.91
Buildings on Game Lands	223,957.00
State Game Farms (including land, buildings, equipment, etc.)	342,524.10
Training School (including buildings and equipment).....	32,095.63
Current Equipment (including automobiles, trucks, tractors, graders, office equipment, etc.)	84,381.31
Total	<hr/> \$3,376,019.95

These capital investments must of necessity be safeguarded by adequate annual expenditures for maintenance, development, and utilization, the details of which will be found in Tables 3 and 4 on pages 62 to 65, in order to reap the maximum benefits therefrom.

SUMMARIZED FUNCTIONAL EXPENDITURES

TABLE No. 1

The expenditures of the Commission during the biennium have been subdivided into major activity groupings as follows:

		<i>Part of Dollar</i>
<i>Game Protection</i> (Salaries and Expenses incident to Law Enforcement, Game Feeding, Game Distribution, Game Law Printing, Assisting in enforcement of Fish and Forest Laws, and other field activities)	\$687,081.35	24.63c.
<i>Management of Game Lands</i> (Salaries and Expenses of Refuge Keepers and other employes incident to maintenance and development work on 751,560 acres of purchased and leased Game Lands and 702 Game Refuges) ..	505,589.85	18.12c.
<i>Game Purchases and Propagation</i> (Including expenditures for equipment and operating four State Game Farms)	472,374.08	16.93c.
<i>Acquisition of Game Lands</i> (Including title and survey work. Mostly capital investment) ..	456,253.52	16.35c.
<i>Payment of Bounties</i>	199,456.77	7.15c.
<i>Public Education</i> (Including Game News, Motion Pictures, Exhibits, General Bulletins, etc.)	113,091.52	4.05c.
<i>Accounting and Budget</i> (Including Legal Advertising, Mailing and Storeroom, issuance of Special Permits, General Printing, etc.)	100,594.92	3.60c.
<i>Training School</i> (Including both Student Class and Refresher Courses for regular Officers)	57,710.38	2.06c.
<i>Hunting Licenses and Tags</i>	51,477.15	1.84c.
<i>Executive Office Administration</i> (Executive Office salaries and expenses, and expenses of Commissioners)	39,923.77	1.46c.
<i>Research and Wild Game Transfer</i> (Including Wild Game Propagating Areas, trapping and redistribution of Game)	35,241.00	1.26c.
<i>Bear Damage and Deer-Proof Fences</i>	23,900.18	.86c.
<i>Feed for Wild Game</i>	20,510.65	.73c.
<i>Special Deer Permit Expenses</i> (Cost of permits and tags, issuance of permits and returning fees)	16,971.08	.61c.
<i>Game Kill Tabulation</i> (Including expenses incident thereto)	9,629.95	.35c.
Total	\$2,789,806.17*	\$1.00

* Exclusive of \$106,378.00 fees, paid for special deer permits, which amount was subsequently refunded.

HOW THE SPORTSMAN'S DOLLAR WAS SPENT

THESE FUNCTIONAL EXPENDITURES COVER THE PERIOD JUNE 1, 1936 TO MAY 31, 1938.

THE EXPENDITURES INDICATED FOR EACH MAJOR ACTIVITY INCLUDE ALL ADMINISTRATIVE EXPENSES IN CONNECTION THEREWITH

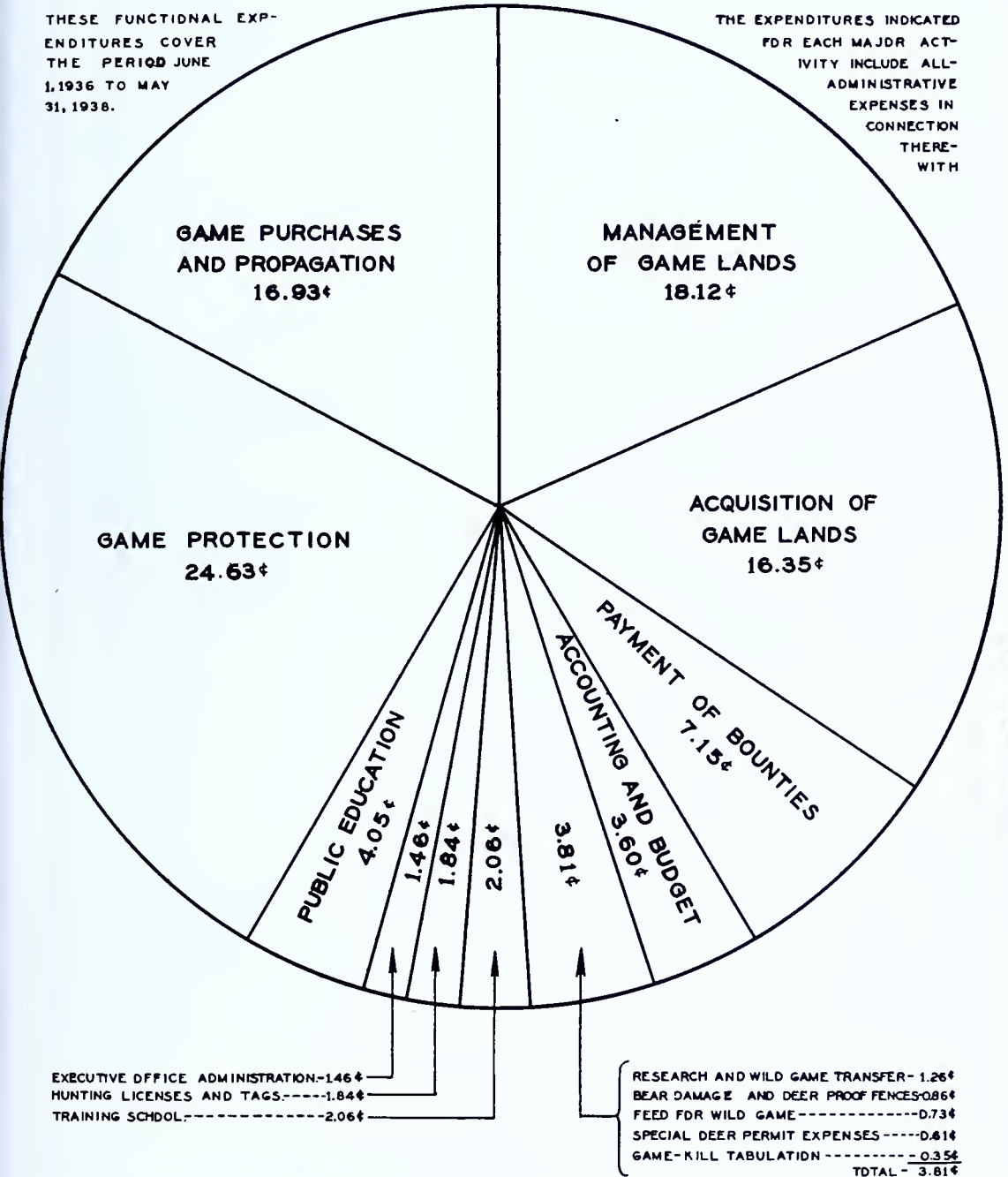


TABLE 3. STATEMENT OF REVENUE AND DISBURSEMENTS—PENNSYLVANIA GAME COMMISSION
FISCAL YEAR JUNE 1, 1936 TO MAY 31, 1937

REVENUE		
Balance in State Treasury to credit of "Game Fund" June 1, 1936	-----	\$1,176,001.32
Less: Unwarranted requisitions chargeable to year ending May 31, 1936	-----	\$25,009.96
Less: Commitments for land purchases and other items incurred prior to June 1, 1936	-----	246,835.35
		271,845.31
Unobligated balance available June 1, 1936	-----	-----
Net Revenue from Hunters' Licenses	-----	\$1,121,195.23
Game Law Fines	-----	59,365.20
Special Game Permits	-----	11,805.00
Interest on Deposits	-----	10,477.87
Wood Forest Products from Game Lands	-----	752.40
Skins Sold	-----	4,510.90
Unserviceable Property	-----	982.50
Rental	-----	252.00
Publications	-----	8,680.83
Miscellaneous Revenue	-----	2,179.87
Amount credited to Game Fund during year	-----	\$1,220,201.80

DISBURSEMENTS								
	Executive Office and Division of Accounting and Budget		Propagation and Game Farms	Game Research and Distribution	Protection	Refuges and Lands	Education	Total
	General	Predatory						
Salaries-----	\$34,766.97	\$4,957.82	\$25,245.77	\$4,743.48	\$178,617.45	\$72,084.77	\$13,029.96	\$333,446.22
Traveling Expenses of Salaried Employees-----	2,723.16	146.10	2,624.40	3,131.46	85,148.66	26,751.82	2,946.34	133,471.94
Deputy Game Protectors:								
Wages-----	—	—	—	—	32,854.91	—	—	32,854.91
Expenses-----	—	—	—	—	—	—	—	—
Wages:								
Labor cutting Fire, Refuge and Boundary Lines, Road Repairs, etc.-----	—	—	—	—	—	43,325.92	—	43,325.92
Labor at Game Farms, etc.-----	2,244.64	1,861.50	38,439.85	3,031.95	1,734.50	6,636.79	2,327.04	49,639.48
Cooperative Farm-Game Program-----	—	—	—	—	—	—	—	6,636.79
Purchase of Game-----	—	—	—	78,026.70	11,717.55	1,426.46	9.17	78,626.70
Fed for Game-----	—	—	29,089.32	271.09	—	—	—	42,513.59
Express on Game-----	—	—	—	18,004.22	—	—	—	18,004.22
Express and Cartage-----	156.47	13.00	374.72	2,369.10	1,293.89	419.87	544.77	5,171.82
Purchase of State Game Lands (title and survey included)-----	—	—	—	—	—	238,021.85	—	238,021.85
Fixed Charges in lieu of Taxes-----	—	—	106.69	—	—	24,854.13	—	24,960.82
Buildings and Construction-----	—	—	18,000.78	657.98	618.40	23,251.02	—	42,528.18
Repairs to Buildings, Grounds and Equipment by Contract-----	95.59	10.21	106.10	—	181.03	2,254.60	130.16	2,777.69

TABLE 3. STATEMENT OF REVENUE AND DISBURSEMENTS—PENNSYLVANIA GAME COMMISSION—Concluded
FISCAL YEAR JUNE 1, 1936, TO MAY 31, 1937

DISBURSEMENTS									
	Executive Office and Division of Account- ing and Budget		Propaga- tion and Game Farms	Game Research tribution	Pro- tection	Refuges and Lands	Educa- tion	Total	
	General	Predatory							
Equipment -----	2,118.74	—	1,827.43	31.70	1,612.88	2,885.60	1,540.77	10,017.12	
Miscellaneous Supplies -----	1,896.13	157.60	10,781.49	925.46	15,992.30	20,987.42	1,997.85	52,738.23	
Motor Equipment, Passenger Cars, Trucks, Tractors, etc. -----	1,724.73	—	5,174.89	626.37	3,398.15	3,730.68	—	14,654.82	
Motor Supplies -----	613.47	—	2,168.32	52.69	5,213.28	1,439.28	1,422.93	10,909.37	
Light, Power and Fuel -----	—	—	2,634.54	—	195.44	173.89	—	3,023.87	
Insurance -----	547.10	70.91	933.94	65.00	2,870.79	1,742.05	230.40	6,460.19	
Postage, Telephone and Telegraph -----	7,839.46	2,574.55	740.87	212.70	8,801.42	2,054.88	1,277.30	23,301.18	
Rentals—Monthly Auto Storage, etc. -----	122.60	—	72.75	—	718.71	2,040.36	439.75	3,414.17	
Bounty Payments -----	—	127,888.00	—	—	—	—	—	127,888.00	
Advancement Account Refund -----	—	*39,943.00	—	—	—	—	—	*39,943.00	
Return of Fines Collected -----	—	—	—	—	2,650.00	—	—	2,650.00	
Fees:—Attorneys, Medical, Taxidermy, etc. -----	4,500.00	—	35.00	—	3,298.63	112.55	108.00	8,063.58	
Deer Proof Fence and Damage by Bears -----	10,403.55	—	—	—	—	—	—	10,403.55	
Other Maintenance Services and Expenses -----	82.63	—	123.47	559.50	463.04	198.15	1,230.23	2,657.02	
Newspaper Advertising -----	4,450.13	—	—	—	27.00	52.54	—	4,529.67	
Printing, Binding and Paper -----	4,192.83	84.41	98.89	214.55	4,143.74	1,488.04	14,406.60	24,029.06	
Printing, Hunters' Licenses, Tags and Miscellaneous Forms (through Department of Revenue) -----	23,089.87	—	—	—	—	—	—	23,089.87	
Administering State Employees' Retirement System (through Department of State) -----	963.62	148.25	741.25	148.25	5,040.50	2,740.60	370.63	10,152.50	
Totals -----	\$102,533.69	\$97,969.35	\$139,340.47	\$113,671.69	\$366,591.67	\$478,672.67	\$42,031.90	\$1,340,811.35	
Net amount of expenditures over current receipts Amount reserved from previous budget allocations to cover commitments for land purchases and other items incurred prior to June 1, 1936 -----									\$120,609.55— 246,855.35
Balance in "Game Fund" (commitments not deducted) at close of business May 31, 1937 -----									\$1,030,381.81
Amount deducted and reserved to cover commitments for land purchases and other items as of May 31, 1937 -----									207,460.00
Balance May 31, 1937 -----									\$822,921.81

* Deducted from expenditures and refunded to "Game Fund" at close of business May 31, 1937.

ANALYSIS OF MAY 31, 1937 BALANCE

+ This balance of \$822,921.81 includes \$166,000.82 allocated for budgetary purposes for the year beginning June 1, 1937 to supplement current revenue, and excludes the \$57.00 balance of Departmental Advancement Account held in bank for the payment of bounty claims. After taking these items into consideration, the net balance available is \$356,977.99, providing the necessary reserve to cover the operating expenses of the Commission until revenues become available in the Fall.

TABLE 4. STATEMENT OF REVENUE AND DISBURSEMENTS—PENNSYLVANIA GAME COMMISSION
FISCAL YEAR JUNE 1, 1937 TO MAY 31, 1938

REVENUE									
Balance in State Treasury to credit of "Game Fund" June 1, 1937									\$1,108,655.01
Less: Unwarranted requisitions chargeable to year ending May 31, 1938									\$78,273.20
Less: Commitments for land purchases and other items incurred prior to June 1, 1937									207,400.00 285,733.20
Unobligated balance available June 1, 1937									—
Net Revenue from Hunters' Licenses									\$1,260,295.03
Game Law Fines									64,430.75
Special Deer Permits									106,378.00
Special Game Permits									14,798.00
Interest on Deposits									9,219.98
Wood Forest Products from Game Lands									8,220.49
Skins Sold									2,863.79
Unserviceable Property									785.00
Rental									294.00
Publications									9,975.36
Miscellaneous Revenue									348.03
Amount credited to Game Fund during year									— \$1,477,628.43
DISBURSEMENTS									
	Executive Office and Division of Accounting and Budget		Propagation and Game Farms	Game Research and Distribution	Protection	Refuges and Lands	Education	Total	
	General	Predatory							
Salaries	\$38,004.56	\$5,242.67	\$26,157.15	\$9,158.14	\$189,745.75	\$86,423.05	\$14,953.33	\$369,684.65	
Traveling Expenses of Salaried Employees	2,978.22	—	2,600.73	4,998.68	95,967.59	24,447.34	4,339.67	135,332.23	
Deputy Game Protectors:									
Wages	—	—	—	—	28,654.78	—	—	28,954.78	
Expenses	—	—	—	—	—	—	—	—	
Wages:									
Labor cutting Fire, Refuge and Boundary Lines, Road Repairs, etc.	—	—	—	—	—	38,467.42	—	38,467.42	
Labor at Game Farms, etc.	1,491.34	1,278.20	39,753.95	5,657.18	5,152.39	—	1,538.04	54,871.10	
Cooperative Farm-Game Program	—	—	—	—	—	32,211.88	—	32,211.88	
Purchase of Game	—	—	30,707.44	68,638.64	—	—	—	68,638.64	
Feed for Game	—	—	—	932.84	—	—	—	932.84	
Express on Game	—	—	—	14,234.98	5,457.00	1,909.64	32.69	39,039.61	
Express and Cartage	—	—	209.34	2,584.04	—	—	—	14,234.98	
Purchase of State Game Lands (title and survey included)	110.61	—	—	—	1,321.39	861.40	2,382.02	7,468.80	
Fixed Charges in lieu of Taxes	—	—	—	—	—	185,514.50	—	185,514.50	
Buildings and Construction	—	—	106.69	—	—	27,789.66	—	27,896.35	
Repairs to Buildings, Grounds and Equipment by Contract	—	—	10,885.55	—	37.08	39,094.33	—	50,016.96	
	170.85	—	232.90	19.00	157.15	1,128.36	140.06	1,848.32	

TABLE 4. STATEMENT OF REVENUE AND DISBURSEMENTS—PENNSYLVANIA GAME COMMISSION—Concluded
FISCAL YEAR YEAR JUNE 1, 1937, TO MAY 31, 1938

DISBURSEMENTS									
	Executive Office and Division of Accounting and Budget		Propaganda and Game Farms	Game Research and Distribution	Protection	Refuges and Lands	Education	Total	
	General	Predatory							
Live Stock	—	—	500.00	—	—	—	—	500.00	
Equipment	1,373.41	89.81	3,944.72	716.30	2,000.82	2,071.60	942.63	11,138.69	
Miscellaneous Supplies	1,745.74	157.10	9,037.70	9,121.01	9,928.61	25,966.58	3,927.30	59,884.04	
Motor Equipment, Passenger Cars, Trucks, Tractors, etc.	—	—	1,995.00	—	2,664.93	12,990.63	662.65	18,313.21	
Motor Supplies	398.51	—	1,680.54	46.70	4,708.67	5,664.91	481.07	13,180.40	
Light, Power and Fuel	—	—	2,391.50	—	420.83	248.11	9.25	3,269.69	
Insurance	1,035.94	141.72	1,397.31	236.37	4,933.31	3,521.25	365.41	11,631.34	
Postage, Telephone and Telegraph	12,063.97	1,000.00	1,004.37	306.26	9,695.17	2,619.33	2,021.73	28,731.25	
Rentals—Monthly Auto Storage, etc.	107.35	—	104.73	1,500.00	689.28	6,608.24	850.00	8,359.60	
Bounty Payments and Grants	—	53,452.50	—	—	—	—	—	54,952.50	
Advancement Account	—	39,943.00	—	—	—	—	—	39,943.00	
Refund of Receipts	559.56	—	—	—	595.60	—	—	1,154.56	
Game-Kill Tabulation and expenses incident thereto.	9,629.95	—	—	—	—	—	—	9,629.95	
Special Deer Permit Refunds, including issuance and refunding expenses	123,349.08	—	—	—	—	—	—	123,349.08	
Fees:									
Attorneys, Medical, Taxidermy, etc.	50	—	3.00	—	524.02	101.35	130.00	758.87	
Deer-Proof Fences and Damage by Bears	13,494.63	—	—	—	762.46	415.66	1,820.39	13,494.63	
Other Maintenance Services and Expenses	203.18	—	162.35	833.85	—	—	—	4,197.89	
Newspaper Advertising	3,292.68	—	—	—	—	—	—	3,292.68	
Printing, Binding and Paper	6,500.47	—	837.28	478.25	8,319.81	2,158.42	35,979.21	54,273.44	
Printing, Hunters' Licenses, Tags and Miscellaneous	—	—	—	—	—	—	—	—	
Forpus (through Department of Revenue)	28,387.78	—	—	—	—	—	—	28,387.78	
Administering State Employees' Retirement System (through Department of State)	1,223.03	182.42	931.00	297.92	6,191.51	3,440.00	484.12	12,750.00	
Totals	\$246,341.36	\$101,487.42	\$634,842.85	\$119,760.16	\$378,227.55	\$503,653.86	\$71,059.62	\$1,555,372.82	
Net amount of expenditures over current receipts									\$77,744.39—
Amount reserved from previous budget allocations to cover commitments for land purchases and other items incurred prior to June 1, 1937									\$207,460.00
Balance in "Game Fund" (commitments not deducted) at close of business May 31, 1938									\$129,715.61
Amount deducted and reserved to cover commitments for land purchases and other items as of May 31, 1938									\$852,637.42
Balance May 31, 1938									232,341.14
									\$720,296.28

ANALYSIS OF MAY 31, 1938 BALANCE

* This balance of \$720,296.28 includes \$401,750.00 allocated for budgetary purposes for the year beginning June 1, 1938 to supplement current revenue, also a balance of \$1,624.47 to cover expenses incident to issuance of hunters' licenses through Department of Revenue, and excludes the \$10,000.00 balance of Departmental Advancement Account held in bank for the payment of bounty claims. After taking these items into consideration, the net balance available is \$356,921.81, providing the necessary reserve to cover the operating expenses of the Commission until revenues become available in the Fall.

TABLE No. 5. STATE GAME LANDS—ACREAGE IN VARIOUS BLOCKS AND COST—MAY 31, 1938

Serial Number of Lands	County	Acquired to May 31, 1936		Acquired Biennium June 1, 1936, to May 31, 1938		Total Acquired to May 31, 1938	
		Acreage	Cost	Acreage	Cost	Acreage	Cost
12	Bradford	21,728.20	\$59,422.40	97.30	\$194.60	21,825.50	\$59,617.00
13	Sullivan	35,541.50	114,430.75	—	—	35,541.50	114,430.75
14	Cameron	11,888.20	32,518.38	—	—	11,888.20	32,518.38
24	Forest-Clarion	8,299.90	47,626.23	—	—	8,299.90	47,626.23
25	Elk	6,288.55	17,293.52	13.25	1.00	6,301.80	17,294.52
26	Bedford-Blair-Cambria	9,109.74	34,314.55	—	—	9,109.74	34,314.55
28	Elk-Forest	9,142.70	22,856.67	—	—	9,142.70	22,856.67
29	Warren	8,718.51	23,085.03	—	—	8,718.51	23,085.03
30	McKean	11,572.03	27,106.30	—	—	11,572.03	27,106.30
31	Jefferson	3,901.36	10,722.78	—	—	3,901.36	10,722.78
33	Centre	9,845.10	27,350.55	2,064.60	6,193.80	11,909.70	33,544.35
34	Clearfield-Elk	8,800.00	26,400.00	—	—	8,800.00	26,400.00
35	Susquehanna	6,744.35	41,631.10	199.90	599.70	6,944.25	42,230.80
36	Bradford	12,118.00	34,282.84	—	—	12,118.00	34,282.84
37	Tioga	4,263.02	12,165.15	2,184.60	5,980.24	6,447.62	18,145.39
38	Monroe	4,878.73	29,686.50	—	—	4,878.73	29,686.50
39	Venango	7,092.58	42,021.54	459.60	2,477.80	7,552.18	44,499.34
40	Carbon	1,948.80	8,145.00	215.60	1,293.60	2,164.40	9,438.60
41	Bedford	1,568.00	3,136.00	—	—	1,568.00	3,136.00
42	Westmoreland	4,606.00	22,893.00	3,094.80	17,132.30	7,700.80	40,025.30
43	Chester-Berks	1,122.60	11,226.00	—	—	1,122.60	11,226.00
44	Elk-Jefferson	24,074.10	85,634.90	—	—	24,074.10	85,634.90
45	Venango	3,071.70	19,129.80	117.30	703.80	3,189.00	19,833.60
46	Lancaster	1,759.80	10,192.00	—	—	1,759.80	10,192.00
47	Venango	2,060.00	6,583.50	—	—	2,060.00	6,583.50
48	Bedford	4,080.40	10,837.41	600.00	1,800.00	4,680.40	12,637.41
49	Bedford-Fulton	3,314.10	11,636.08	—	—	3,314.10	11,636.08
50	Somerset	3,164.10	15,652.30	—	—	3,164.10	15,652.30
51	Fayette	7,116.00	35,880.90	551.90	2,300.60	7,667.90	38,181.50
52	Lancaster-Berks	1,425.00	9,866.50	—	—	1,425.00	9,866.50
53	Fulton	4,352.90	14,445.75	199.40	684.30	4,552.30	15,130.05
54	Jefferson-Elk	20,507.20	112,779.40	—	—	20,507.20	112,779.40
55	Columbia	1,800.20	5,403.80	—	—	1,800.20	5,403.80
56	Bucks	1,390.40	13,278.90	127.80	1,278.00	1,518.20	14,556.90
57	Wyoming	24,622.30	75,731.00	5,269.10	18,345.90	29,891.40	94,076.90
58	Columbia	9,165.60	27,662.10	—	—	9,165.60	27,662.10
59	Potter-McKean	6,656.20	19,468.10	—	—	6,656.20	19,468.10
60	Centre	4,027.70	10,069.25	—	—	4,027.70	10,069.25
61	McKean	8,142.20	25,789.97	—	—	8,142.20	25,789.97
62	McKean	520.50	1,685.40	—	—	520.50	1,685.40
63	Clarion	2,770.40	16,622.40	—	—	2,770.40	16,622.40
64	Potter	5,916.20	17,748.60	—	—	5,916.20	17,748.60
65	Fulton	3,034.60	12,138.40	395.00	1,800.00	3,429.60	13,938.40
66	Sullivan	3,292.60	7,387.10	1,295.10	5,827.95	4,587.70	13,215.05
67	Huntingdon	1,177.70	2,944.25	672.00	1,344.00	1,849.70	4,288.25
68	Lycoming	3,005.70	13,631.90	—	—	3,005.70	13,631.90
69	Crawford	2,580.60	12,818.26	—	—	2,580.60	12,818.26
70	Wayne	2,278.60	10,667.00	122.90	491.60	2,401.50	11,158.60
71	Huntingdon	2,011.40	5,028.50	2,768.30	6,920.75	4,779.70	11,949.25
72	Clarion	2,019.00	12,114.00	—	—	2,019.00	12,114.00
73	Bedford	14,977.00	49,402.09	—	—	14,977.00	49,402.09
74	Clarion-Jefferson	6,043.40	36,260.40	—	1,000.00	6,043.40	37,260.40
75	Lycoming	18,064.50	52,383.65	1,240.40	6,483.20	19,304.90	58,866.85
76	Franklin	2,375.70	7,127.10	1,437.00	5,124.80	3,812.70	12,251.90
77	Clearfield	3,038.00	7,595.00	—	—	3,038.00	7,595.00
78	Clearfield	720.70	2,702.63	—	—	720.70	2,702.63
79	Cambria	2,059.20	7,594.30	—	—	2,059.20	7,594.30
80	Lebanon-Berks-Schuylkill	5,070.40	21,715.85	—	—	5,070.40	21,715.85
81	Huntingdon	2,054.40	3,879.90	247.90	619.75	2,302.30	4,499.65
82	Somerset	1,283.70	3,851.10	—	—	1,283.70	3,851.10
83	York	760.80	6,931.60	—	—	760.80	6,931.60
84	Northumberland	4,684.60	14,053.80	—	—	4,684.60	14,053.80
85	Crawford	871.60	4,358.00	—	—	871.60	4,358.00
86	Warren	11,346.70	37,203.40	99.60	597.60	11,446.30	37,801.00
87	Clearfield	1,123.80	3,933.30	—	—	1,123.80	3,933.30
88	Perry	4,001.80	12,072.60	2,429.30	6,934.68	6,431.10	19,007.28
89	Clinton	9,545.70	28,637.10	—	—	9,545.70	28,637.10
90	Clearfield	2,338.60	7,015.80	401.20	1,003.00	2,739.80	8,018.80
91	Lackawanna-Luzerne	8,255.90	28,026.60	—	—	8,255.90	28,026.60
92	Centre	2,276.50	9,106.00	198.70	596.10	2,475.20	9,702.10
93	Clearfield	4,717.10	18,868.40	—	—	4,717.10	18,868.40
94	Clearfield	1,008.40	3,025.20	—	—	1,008.40	3,025.20
95	Butler	1,042.70	5,213.50	704.80	3,226.40	1,747.50	8,439.90
96	Venango	3,280.00	15,717.00	—	—	3,280.00	15,717.00

TABLE No. 5. STATE GAME LANDS—ACREAGE IN VARIOUS BLOCKS AND COST—MAY 31, 1938—Concluded

Serial Number of Lands	County	Acquired to May 31, 1936		Acquired Biennium June 1, 1936, to May 31, 1938		Total Acquired to May 31, 1938	
		Acreage	Cost	Acreage	Cost	Acreage	Cost
97	Bedford -----	2,170.00	5,103.28	3,327.20	14,650.80	5,497.20	19,754.08
98	Clearfield -----	1,180.30	4,131.05	—	—	1,180.30	4,131.05
99	Huntingdon -----	1,888.10	4,720.25	—	—	1,888.10	4,720.25
100	Centre -----	3,311.00	9,933.00	464.60	1,393.80	3,775.60	11,326.80
101	Erie-Crawford -----	920.00	9,200.00	320.20	2,881.80	1,240.20	12,081.80
102	Erie -----	277.80	2,778.00	—	—	277.80	2,778.00
103	Centre -----	1,030.50	3,091.50	—	—	1,030.50	3,091.50
104	Bedford-Somerset -----	3,034.20	7,585.50	—	—	3,034.20	7,585.50
105	Armstrong -----	1,303.00	3,909.00	—	—	1,303.00	3,909.00
106	Berks-Schuylkill -----	1,706.60	5,118.00	—	—	1,706.00	5,118.00
107	Juniata-Mifflin -----	3,613.80	11,458.50	16.60	166.00	3,630.40	11,624.50
108	Cambria -----	1,673.93	5,021.70	2,574.30	7,855.71	4,248.20	12,877.41
109	Erie -----	615.70	5,778.75	335.20	3,352.00	950.90	9,130.75
110	Schuylkill-Berks -----	5,923.90	22,214.63	—	—	5,923.90	22,214.63
111	Somerset -----	5,683.40	12,531.70	745.30	2,717.70	6,428.70	15,249.40
112	Huntingdon -----	1,027.00	4,108.00	—	—	1,027.00	4,108.00
113	Mifflin -----	534.20	1,602.60	—	—	534.20	1,602.60
114	Lycoming -----	2,310.80	7,007.50	—	—	2,310.80	7,007.50
115	Northumberland-Montour -----	1,133.80	3,401.40	—	—	1,133.80	3,401.40
116	Pike -----	1,678.30	12,587.25	—	—	1,678.30	12,587.25
117	Washington -----	2,309.50	6,928.50	—	—	2,309.50	6,928.50
118	Huntingdon -----	195.20	182.81	262.20	1,048.80	457.40	1,231.61
119	Luzerne -----	2,429.70	8,503.95	1,080.70	3,782.45	3,510.40	12,286.40
120	Clearfield -----	917.30	2,751.90	1,828.80	4,654.40	2,746.10	7,406.30
121	Huntingdon -----	444.10	1,329.67	—	—	444.10	1,329.67
122	Crawford -----	638.60	2,554.40	158.50	732.56	797.10	3,286.96
123	Bradford -----	—	—	720.90	3,604.50	720.90	3,604.50
124	Franklin-Fulton -----	—	—	5,384.90	16,154.70	5,384.90	16,154.70
125	Lycoming -----	—	—	741.60	2,966.40	741.60	2,966.40
126	Lycoming -----	—	—	591.90	1,183.80	591.90	1,183.80
127	Monroe -----	—	—	2,955.50	12,903.20	2,955.50	12,903.20
128	Fulton -----	—	—	1,527.20	5,302.75	1,527.20	5,302.75
129	Carbon-Monroe -----	—	—	2,705.30	16,010.85	2,705.30	16,010.85
130	Mercer -----	—	—	845.90	5,707.50	845.90	5,707.50
131	Huntingdon -----	—	—	187.50	1.00	187.50	1.00
132	Schuylkill -----	—	—	292.00	1,460.00	292.00	1,460.00
133	Lycoming -----	—	—	2,008.50	5,021.25	2,008.50	5,021.25
134	Lycoming -----	—	—	1,568.20	7,144.20	1,568.20	7,144.20
135	Lackawanna -----	—	—	1,138.90	4,250.50	1,138.90	4,250.50
136	Lancaster -----	—	—	91.00	910.00	91.00	910.00
137	Armstrong -----	—	—	1,113.80	5,569.00	1,113.80	5,569.00
138	Fayette -----	—	—	2,418.00	5,866.70	2,418.00	5,866.70
139	Bucks -----	—	—	159.30	1,593.00	159.30	1,593.00
140	Susquehanna -----	—	—	304.30	1,521.50	304.30	1,521.50
141	Carbon -----	—	—	1,099.10	6,594.60	1,099.10	6,594.60
142	Bradford -----	—	—	277.70	1,110.80	277.70	1,110.80
143	Warren -----	—	—	4,508.70	22,543.50	4,508.70	22,543.50
144	Crawford -----	—	—	256.10	1,279.32	256.10	1,279.32
145	Lebanon -----	—	—	2,207.30	32,359.50	2,207.30	32,359.50
146	Crawford -----	—	—	495.80	3,966.40	495.80	3,966.40
147	Blair -----	—	—	3,384.70	8,665.56	3,384.70	8,665.56
148	Lawrence -----	—	—	217.60	2,176.00	217.60	2,176.00
149	Luzerne -----	—	—	428.70	2,143.50	428.70	2,143.50
Totals -----		507,406.37	\$1,821,368.92	75,951.35	\$822,201.52	583,357.72	\$2,143,570.44

TABLE No. 6. STATE GAME LANDS—ACREAGE AND COST OF LANDS CONVEYED
EACH YEAR SINCE 1920
(May 31, 1938)

Period	Acreage Conveyed		Consideration Paid	
	During the Year	Total to End of Year	During the Year	Total to End of Year
Calendar Year				
1920 -----	6,288.55	6,288.55	\$17,293.52	\$17,293.52
1921 -----	31,458.41	37,746.96	85,499.12	102,792.64
December 1, 1921-June 1, 1922-----	536.25	38,283.21	2,299.38	105,092.02
Fiscal Year				
1922-23 -----	5,128.40	43,411.61	10,339.30	115,431.32
1923-24 -----	11,780.43	55,192.04	40,251.13	155,682.45
1924-25 -----	30,827.23	86,019.27	88,343.47	244,025.92
1925-26 -----	—	86,019.27	—	244,025.92
1926-27 -----	6,621.35	92,640.62	40,913.10	284,939.02
1927-28 -----	9,900.75	102,541.37	39,746.26	324,685.28
1928-29 -----	42,865.93	145,407.30	171,493.43	496,178.71
1929-30 -----	28,144.10	173,551.40	120,680.53	616,859.24
1930-31 -----	69,837.10	243,880.50	266,394.32	883,253.56
1931-32 -----	76,753.27	320,141.77	288,008.79	1,171,262.35
1932-33 -----	44,630.79	364,772.47	*167,195.45	1,338,457.80
1933-34 -----	61,802.30	426,574.77	*202,573.37	1,541,031.17
1934-35 -----	38,847.29	465,421.97	*133,677.30	1,674,708.47
1935-36 -----	41,984.40	507,406.37	*146,660.45	1,821,368.92
1936-37 -----	45,036.85	552,443.22	*174,691.95	1,996,060.87
1937-38 -----	30,914.50	583,357.72	*147,509.57	2,143,570.44

* These figures do not correspond to those shown in departmental financial statements, since certain grantors' settlement checks were issued within the fiscal year, but final settlements were unavoidably delayed pending completion of necessary formalities in connection with title. Accounting records must show an expenditure as soon as a settlement check is issued, whereas land records of the Bureau cannot show a transaction completed until the deed is signed, recorded and the consideration actually paid to the grantor.

TABLE No. 7. STATE GAME LANDS—ACREAGE WITHIN RESPECTIVE COUNTIES
(May 31, 1938)

County	Acreage			Number of Townships Involved
	Acquired to May 31, 1936	Acquired Biennium June 1, 1936 to May 31, 1938	Total May 31, 1938	
Armstrong	1,303.00	1,113.80	2,416.80	3
Beaver	—	28.00	28.00	1
Bedford	27,785.15	3,927.20	31,712.35	15
Berks	6,476.00	—	6,476.00	9
Blair	3,234.14	3,646.90	6,881.04	6
Bradford	32,741.40	1,095.90	33,837.30	10
Bucks	1,390.40	287.10	1,677.50	4
Butler	1,042.70	704.80	1,747.50	3
Cambria	6,784.45	2,574.30	9,358.75	5
Cameron	11,888.20	—	11,888.20	1
Carbon	1,948.80	3,559.20	5,508.00	2
Centre	20,490.80	2,727.90	23,218.70	7
Chester	905.80	—	905.80	1
Clarion	11,947.60	117.30	12,064.90	8
Clearfield	20,100.20	2,230.00	22,330.20	12
Clinton	9,545.70	—	9,545.70	2
Columbia	10,965.80	—	10,965.80	8
Crawford	4,435.80	910.40	5,346.20	7
Elk	45,648.75	13.25	45,662.00	7
Erie	1,468.50	655.40	2,123.90	6
Fayette	7,256.00	2,969.90	10,225.90	4
Forest	7,056.90	—	7,056.90	2
Franklin	2,375.70	4,591.20	6,966.90	5
Fulton	8,633.10	4,352.30	12,985.40	7
Huntingdon	11,171.10	3,875.70	15,046.80	16
Indiana	100.00	—	100.00	1
Jefferson	22,631.36	—	22,631.36	7
Juniata	2,489.90	2,366.00	4,855.90	4
Lackawanna	1,499.70	1,138.90	2,638.60	2
Lancaster	2,865.80	91.00	2,956.80	4
Lawrence	—	189.60	189.60	1
Lebanon	2,671.00	2,207.30	4,878.30	4
Luzerne	9,185.90	6,586.60	15,772.50	7
Lycoming	23,381.00	6,150.60	29,531.60	9
McKean	20,633.93	—	20,633.93	3
Mercer	—	845.90	845.90	1
Mifflin	2,076.80	8.00	2,084.80	4
Monroe	4,878.73	3,416.30	8,295.03	5
Montour	227.50	—	227.50	1
Northumberland	5,048.40	—	5,048.40	4
Perry	3,583.10	71.90	3,655.00	2
Pike	1,678.30	—	1,678.30	2
Potter	12,173.20	—	12,173.20	6
Schuylkill	4,631.60	292.00	4,923.60	8
Somerset	10,455.20	745.30	11,200.50	7
Sullivan	39,908.90	1,295.10	41,204.00	6
Susquehanna	6,744.35	504.20	7,248.55	5
Tioga	4,263.02	2,184.60	6,447.62	4
Venango	15,010.28	459.60	15,469.88	11
Warren	20,065.21	4,608.30	24,673.51	6
Washington	2,309.50	—	2,309.50	2
Wayne	2,278.60	122.90	2,401.50	1
Westmoreland	4,606.00	3,094.80	7,700.80	2
Wyoming	24,652.30	191.90	24,844.20	3
York	760.80	—	760.80	2
Totals—55 counties	507,406.37	75,951.35	583,357.72	275

TABLE No. 8. PRIMARY STATE GAME REFUGES LOCATED ON STATE GAME LANDS
(May 31, 1938)

The serial number designating State Game Lands likewise applies to Refuges located thereon.

Serial Number of Refuge	Location		Year Refuge Estab- lished	Acreage in Refuge
	County	Township		
12	Bradford	Leroy-Barclay	1915	2,106
13-A	Sullivan	Davidson	1915	3,027
13-B	Sullivan	Colley	1936	308
14-A	Cameron	Shippen	1915	1,000
14-B	Cameron	Shippen	1933	209
14-C	Cameron	Shippen	1936	400
24	Forest	Green	1918	1,560
25	Elk	Jones	1920	2,096
26-A	Bedford	Union-Greenfield	1921	1,727
26-B	Bedford-Cambria	Union-Summerhill	1934	206
28	Elk-Forest	Spring Creek-Highland-Jenks	1920	2,622
29	Warren	Watson-Cherry Grove	1921	2,369
30-A	McKean	Norwich	1925	1,843
30-B	McKean	Norwich	1936	334
31	Jefferson	McCalmont-Oliver	1923	541
33-A	Centre	Rush	1925	1,530
33-B	Centre	Rush	1938	183
33-C	Centre	Rush	1938	110
34	Clearfield-Elk	Girard-Benezette	1925	2,068
35-A	Susquehanna	Great Bend	1926	1,500
35-B	Susquehanna	Great Bend	1936	50
36-A	Bradford	Barclay	1932	180
36-B	Bradford	Monroe-Overton	1932	265
37	Tioga	Middlebury-Richmond	1932	334
39	Venango	Mineral-Victory	1931	1,008
40	Carbon	Kidder	1932	311
41-A	Bedford	Bloomfield	1935	405
41-B	Bedford	Bloomfield	1937	100
42	Westmoreland	St. Clair	1926	765
43	Chester	Warwick	1934	200
44-A	Elk	Ridgway	1925	1,045
44-B	Elk	Ridgway	1926	525
45	Venango	Cranberry	1932	289
46	Lancaster	Clay	1932	210
47	Venango	President	1932	375
48	Bedford	Londonderry	1930	391
49	Bedford-Fulton	Monroe-Union	1930	495
50	Somerset	Black-Somerset	1935	398
51-A	Fayette	Dunbar	1933	727
51-B	Fayette	Dunbar	1933	317
52	Lancaster	Breeknock-Caernarvon	1932	195
53	Fulton	Ayr	1934	407
54-A	Jefferson	Polk-Snyder	1932	580
54-B	Jefferson	Polk	1929	800
55	Columbia	Briar Creek	1925	261
56-A	Bucks	Tinicum	1919	219
56-B	Bucks	Bradgeton-Nockamixon	1919	260
57-A	Wyoming	Noxen-Forkston	1934	682
57-B	Wyoming	Forkston	1933	325
57-C	Wyoming	Forkston-West Branch	1933	475
57-D	Wyoming	Noxen	1938	144
58-A	Columbia	Beaver	1925	447
58-B	Columbia	Main	1932	367
59	Potter	Pleasant Valley	1933	841
61	McKean	Liberty	1933	548
63-A	Clarion	Elk	1932	328
63-B	Clarion	Elk	1935	101
64	Potter	Pike	1934	1,008
65	Fulton	Brush Creek	1932	625
67	Huntingdon	Carbon-Todd	1934	185
68-A	Lycoming	Brown	1932	387
68-B	Lycoming	Brown	1938	49
68-C	Lycoming	Brown	1938	55
69	Crawford	Troy-Randolph	1933	472
70	Wayne	Scott	1932	228
71	Huntingdon	Union	1925	467
72	Clarion	Highland-Paint	1926	510
73-A	Bedford	South Woodbury	1927	392
73-B	Bedford	Woodbury	1934	565
73-C	Huntingdon	Lincoln	1934	400
73-D	Blair	Huston	1934	358
73-E	Blair	North Woodbury	1934	303

TABLE No. 8. PRIMARY STATE GAME REFUGES LOCATED ON STATE GAME LANDS
(May 31, 1938)
—Concluded

The serial number designating State Game Lands likewise applies to Refuges located thereon.

Serial Number of Refuge	Location		Year Refuge Estab- lished	Acreage in Refuge
	County	Township		
73-F	Huntingdon	Hopewell	1936	252
73-G	Bedford	Liberty	1936	390
75-A	Lyeoming	Pine	1934	493
75-B	Lyeoming	Pine	1934	533
75-C	Lyeoming	Pine	1934	336
76	Franklin	Letterkenny	1925	471
77	Clearfield	Sandy	1936	134
78	Clearfield	Graham	1925	582
79	Cambria	Blacklick	1933	300
80	Lebanon	Bethel	1925	315
81-A	Huntingdon	Springfield	1925	198
81-B	Huntingdon	Springfield	1934	100
82	Somerset	Northampton-Larimer	1933	243
83-A	York	Lower Chanceford	1937	40
83-B	York	Lower Chanceford	1937	41
84-A	Northumberland	E. Cameron	1926	251
84-B	Northumberland	W. Cameron	1934	248
85	Crawford	Rockdale	1935	141
87	Clearfield	Bell	1936	248
88	Perry	Madison	1934	241
89	Clinton	Gallagher	1937	345
91	Laekawanna	Bear Creek	1936	367
92	Centre	Howard	1934	151
93	Clearfield	Huston	1924	800
95-A	Butler	Washington	1936	47
95-B	Butler	Washington	1936	30
95-C	Butler	Washington	1936	43
95-D	Butler	Washington	1936	23
96	Venango	Plum	1937	94
97-A	Bedford	Snake Spring	1934	345
97-B	Bedford	Monroe	1934	338
97-C	Bedford	Monroe	1937	397
97-D	Bedford	Monroe	1937	373
98	Clearfield	Boggs	1938	150
99	Huntingdon	Clay	1935	380
100	Centre	Burnside	1934	295
101	Erie	Conneaut	1937	85
103	Centre	Union	1937	180
105	Armstrong	Bradys Bend	1935	150
106	Berks	Albany	1937	88
107	Juniata	Fermanagh	1935	530
108	Cambria	Chest	1937	125
109	Erie	Greene	1937	123
110-A	Berks	Upper Tulpehocken	1937	175
110-B	Berks	Upper Bern	1937	36
111	Somerset	Lower Turkeyfoot	1936	468
112	Huntingdon	Henderson	1936	216
113	Mifflin	Oliver	1936	54
115	Northumberland	Point	1937	217
117	Washington	Smith-Hanover	1937	130
120	Clearfield	Chest	1936	135
123	Bradford	South Creek	1936	94
134	Lyeoming	Plunketts Creek	1937	173
136-A	Laneaster	Colerain	1937	14
136-B	Laneaster	Colerain	1937	4
137	Armstrong	Mahoning	1938	69
128	Totals			59,914

TABLE No. 9. PRIMARY STATE GAME REFUGES, LOCATED ON STATE FORESTS, ALLEGHENY NATIONAL FOREST, ETC.
(May 31, 1938)

These Refuges are surrounded by thousands of acres of publicly owned land open to hunting.

Serial Number of Refuge	County	Location of Refuge		Designation of Lands	Year Estab- lished	Acreage in Refuge
		Township				
501-A	Clinton	Noyes and Beech Creek		Sproul State Forest	1905	1,768.0
501-B	Clinton	Noyes and Beech Creek		Sproul State Forest	1936	567.0
502-A	Clearfield	Pine		Moshannon State Forest	1906	3,407.0
503-A	Franklin	Quincy		Mont Alto State Forest	1906	485.0
503-B	Franklin	Quincy		Mont Alto State Forest	1935	520.0
503-C	Adams	Hamiltonban		Mont Alto State Forest	1935	270.0
503-D	Franklin	Gulford		Mont Alto State Forest	1935	215.0
503-E	Franklin	Gulford		Mont Alto State Forest	1935	178.0
503-F	Franklin	Greene		Michaux State Forest	1936	172.0
503-G	Cumberland-Adams	Southampton and Franklin		Michaux State Forest	1936	934.0
504-A	Perry	Toboyne		Tuscarora State Forest	1911	784.0
504-B	Perry	Toboyne		Tuscarora State Forest	1934	299.0
504-C	Perry	Toboyne		Tuscarora State Forest	1934	213.0
504-D	Perry	Toboyne		Tuscarora State Forest	1934	195.0
504-E	Perry	Toboyne		Tuscarora State Forest	1934	270.0
504-F	Perry	Tyrone		Tuscarora State Forest	1934	275.0
504-G	Cumberland-Perry	Upper Mifflin and Toboyne		Tuscarora State Forest	1934	373.0
505-A	Westmoreland	Cook		Forbes State Forest	1911	1,740.0
505-B	Somerset	Jefferson		Forbes State Forest	1925	141.0
506-A	Centre	Haines		Bald Eagle State Forest	1912	1,265.8
506-B	Centre	Penn		Bald Eagle State Forest	1934	436.0
507	Lycoming-Clinton-Potter	Brown-Chapman-Stewardson		Tiadaughton State Forest	1915	2,460.0
508	Lyeoming	Plunketts Creek		Tiadaughton State Forest	1915	1,785.0
509-A	Huntingdon	Jackson		Logan State Forest	1915	2,646.0
509-B	Huntingdon	Jackson		Logan State Forest	1934	203.0
509-C	Huntingdon	Miller		Logan State Forest	1934	252.0
509-D	Huntingdon	Jackson		Logan State Forest	1934	923.0
509-E	Huntingdon	Jackson-Miller		Logan State Forest	1934	327.0
509-F	Huntingdon	Miller		Logan State Forest	1934	250.0
509-G	Centre	Harris		Logan State Forest	1934	222.0
509-H	Centre	Harris		Logan State Forest	1935	222.0
510	Crawford	Pine-Sadsbury-North Shenango		Pymatuning Dam (Waterfowl and Upland Game)	1935	3,670.0
511-A	Lackawanna	Lehigh		Lackawanna State Forest	1915	2,774.0
512-A	Franklin-Fulton	Metal-Todd		Buchanan State Forest & P. R. R.	1924	1,204.0
512-B	Fulton	Todd		Buchanan State Forest	1934	180.0
512-C	Franklin	Letterkenny		Buchanan State Forest	1934	180.0
513-A	Cameron	Grove		Sinnemahoning State Forest	1934	178.0
514-B	Snyder	Beaver		Bald Eagle State Forest	1934	2,272.0
					1934	666.0

These refuges are surrounded by thousands of acres publicly owned land open to hunting.

Serial Number of Refuge	Location of Refuge		Year Estab- lished	Acreage in Refuge
	County	Township		
515-A	Potter	Summit	1916	3,434.0
515-B	Potter	Homer	1925	425.0
515-C	Potter	Ulysses	1936	303.0
516-A	Tioga	Shilpen	1916	3,970.0
516-B	Tioga	Elk	1926	266.0
516-C	Tioga	Gaines-Clymer	1926	129.0
517	Potter-Cameron	Portage-Portage	1916	2,802.0
518-A	Mifflin-Juniata	Brafton-Tuscarora	1916	2,900.0
518-B	Juniata	Lack	1926	173.0
518-C	Mifflin	Wayne	1925	156.0
519-A	Warren	Limestone	1933	509.0
519-B	Forest	Jinks	1937	1,016.0
520	Bedford	Colerain-Southampton	1917	1,998.0
521	Dauphin	Jackson	1918	2,130.0
522-A	Union-Centre	Hartley-Haines	1918	241.0
522-B	Union	West Buffalo-Lewis	1934	638.0
522-C	Union	White Deer-West Buffalo	1934	607.0
522-D	Union	Hartley	1934	670.0
522-E	Lycoming	Limestone-Washington	1934	1,896.0
523	Huntingdon	Penn-Union-Cass	1925	633.0
524	Cameron	Gilson	1925	653.0
525-A	Pike	Blooming Grove	1926	330.0
525-B	Pike	Westfall	1927	130.0
525-C	Pike	Porter	1925	210.0
526-A	Clinton	Greene	1925	472.0
526-B	Clinton	Wayne	1925	231.0
527-A	Cumberland	Cooke	1934	413.0
527-B	Cumberland	Dickinson	1936	308.0
527-C	Cumberland	Cooke	1936	185.0
527-D	Cumberland	Cooke	1936	115.0
527-E	Cumberland	Southampton	1936	569.0
527-F	Cumberland	Southampton	1936	652.0
527-G	Adams	Menallen	1936	187.0
528-A	Mifflin	Armagh	1934	142.0
528-B	Mifflin	Armagh	1934	108.0
528-C	Mifflin	Armagh	1934	214.0
529	Fulton-Bedford	Union-Monroe	1934	186.0
530	Somerset	Addison	1934	744.0
532-A	Huntingdon	Logan-West	1921	1,393.0
532-B	Huntingdon	Porter	1934	261.0
532-C	Huntingdon	West	1964	225.0
532-D	Huntingdon	West	1934	345.0
532-E	Huntingdon	Barre	1934	196.0
533	Sullivan	Forks-Shrewsbury	1936	814.0

Located on privately owned land for which the Commission leases the hunting rights.

Project Number	County	Lessor	Year Estab- lished	Acreage		
				In Refuge	Open to Public Hunting	Total Leased
1	Clarion	Campbell-Logue	1918	700	—	700
9	Blair	Graymiller-Hartman	1923	500	598	1,098
10	Potter	Gray Chemical Company	1924	1,900	4,797	6,697
12	Cambria-Clearfield	Clearfield Bit. Coal Corp.	1925	200	4,120	4,320
19	Cambria	J. H. Hommer Est.	1925	330	670	1,000
20	Wayne	Seranton Council Boy Scouts	1925	440	—	440
21	Clearfield	Harrison-Walker Ref. Co.	1925	380	1,504	1,884
22	McKean	Smithport Water Co.	1925	400	1,519	1,919
33	Dauphin	H. M. Bayard Heirs	1925	350	2,650	3,000
40	Berks	Borough of Hamburg	1926	315	1,965	2,280
50	Butler	Blain-Sumney et al.	1926	211	309	520
55	Monroe-Northampton	Blue Mt. Consol. Water Co.	1927	152	2,848	3,000
57	Clearfield	Paul-Rebecca, Alta Smith	1926	111	450	561
61	Jefferson	Kane Brick & Tile Co.	1926	100	1,000	1,100
65	Luzerne	Hon. J. Q. Creveling & G. R. Markle, Jr.	1926	290	91	381
67	Cambria	Bethlehem Steel Prod. Co.	1926	343	1,376	1,719
71	Potter	Hon. Robt. R. Lewis	1930	405	420	825
73	Indiana	General Coal Corp.	1932	180	615	795
74	Luzerne	Laura R.-L. R. Stull	1933	226	774	1,000
75	Snyder	William P. Woods	1933	200	89	289
76	Lebanon	Harry E. Millard	1933	239	1,261	1,500
77	Montour	D. R. Rishel	1934	100	62	162
78	Blair	Roaring Springs Borough	1934	298	912	1,210
82	Cameron	Emporium Water Co.	1934	900	2,010	3,000
86	Clearfield	Kerr, Welsh, Short et al.	1934	122	328	450
92	Bedford	J. V. Desser, Luke Ritchey	1934	467	773	1,240
93	Bedford	Sewell Bowser-P. A. Bender	1935	233	233	633
94	Clearfield	James McPherson et al.	1934	180	395	575
95	Clearfield	Ruffner, Kitko, et al.	1934	330	10	340
96	Clarion	Wallwork Coal Co.	1935	150	250	400
97	Cambria	Clearfield Bit. Coal Corp. & Penna. Coal & Coke Co.	1935	100	1,200	1,300
98	Venango	Polk State School	1936	200	500	700
99	Berks	City of Reading	1936	2,820	—	2,820
100	Berks	Borough of Fleetwood	1936	122	—	122
101	Centre	J. H. Turner, P. B. Meek	1937	170	359	529
102	Montour	James L. Brannen	1937	40	69	109
103	Montour	Geo. F. Johnson	1937	50	135	185
104	Montour	E. W. Geringer	1937	32	78	110
105	Schuylkill	John Wennerick	1938	*	—	*168
106	Huntingdon	Geo. O. Supes and Herbert G. Fritz	1938	180	162	342
107	Huntingdon	H. B. Moyer and E. D. Grove	1938	6	190	201
108-A	York	Geo. P. Evans	1938	6	—	—
108-B	York	Geo. P. Evans	1938	5	—	—
109	Blair	W. S. Bell	1938	*	—	*1,600
110	Columbia	Penro Leiby and Harry Carl	1938	*	—	*251
44	Totals		14,734	34,722	52,934	

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Located on privately owned farms for which the Commission leases the hunting rights

Project Number	County	Number of Farms	Year Established	Safety Zone Totals		Refuge Totals		Leased Acreage		
				Number	Average	Number	Average	Closed to Hunting	Open to Public Hunting	Total Leased
1	Chester	14	1936	18	391	18	227.0	618.0	1,134.8	1,777.8
2	Chester	22	1937	20	382	18	214.0	596.0	1,315.9	1,911.9
3	Bucks	21	1937	19	316	8	73.0	389.0	776.0	1,165.0
4	Montgomery	37	1937	31	625	16	113.5	738.5	1,072.5	1,811.0
5	Washington	13	1937	21	424	13	103.0	527.0	1,397.0	1,897.0
6	Washington	15	1937	17	346	17	140.0	492.0	783.0	1,275.0
7	Bucks	10	1937	10	154	9	58.0	212.0	367.5	579.5
8	Bucks	4	1937	5	94	6	33.0	128.0	267.0	395.0
9	Berks, Lehigh	27	1937	27	515	36	194.0	709.0	2,338.0	3,047.0
10	Montgomery	28	1937	30	455	14	98.0	553.0	710.0	1,263.0
11	Montgomery	46	1937	39	574	32	191.0	765.0	1,532.5	2,297.5
12	Montgomery	53	1937	54	856	36	267.0	1,123.0	1,972.0	3,095.0
13	Greene	10	1937	11	225	15	127.0	352.0	608.0	1,020.0
14	Greene	19	1937	18	344	12	106.0	344.0	1,207.0	1,657.0
15	Westmoreland	6	1937	4	89	9	75.0	164.0	480.0	644.0
16	Berks	5	1937	5	110	7	37.0	147.0	475.0	622.0
17	Berks	3	1937	8	139	10	81.0	220.0	596.6	816.6
18	Berks	4	1937	3	53	5	33.0	86.0	272.0	358.0
19	Montgomery	13	1937	9	302	10	37.0	339.0	407.5	806.5
20	Fayette	9	1937	8	212	9	43.0	255.0	692.9	947.9
21	Fayette-Westmoreland	4	1937	5	115	10	253.0	268.0	2,110.5	2,478.5
22	Washington	9	1937	7	174	7	55.0	229.0	527.5	756.5
23	Lebanon	17	1937	5	81	1	22.0	103.0	1,808.0	1,911.0
24	Westmoreland	4	1937	4	88	8	37.0	145.0	238.5	383.5
25	Armstrong	3	1937	3	98	7	39.0	137.0	264.0	401.0
26	Armstrong	6	1937	5	94	8	116.0	210.0	394.0	604.0
27	Montgomery	10	1937	9	144	9	54.0	198.0	504.0	702.0
28	Westmoreland	4	1937	3	51	5	51.0	102.0	274.0	376.0
29	Allegheny	10	1937	11	234	8	126.0	360.0	644.0	1,004.0
30	Lancaster	26	1937	30	550	37	152.0	702.0	2,587.8	3,289.8
31	Lawrence	11	1937	6	134	6	60.0	194.0	390.0	584.0
32	Northampton	3	1937	2	19	3	20.0	39.0	575.9	614.9
33	Fayette	13	1937	10	227	8	68.0	265.0	590.0	885.0
34	Lancaster	6	1937	5	80	2	6.0	86.0	280.5	366.5
35	Fayette	7	1938	8	168	8	69.0	237.0	292.0	529.0
36	Armstrong	17	1938	22	530	23	240.0	770.0	1,397.0	2,367.0
37	Indiana	2	1938	—	—	—	—	—	—	—
38	Indiana	11	1938	—	—	—	—	—	—	—
39	Armstrong	1	1938	—	—	—	—	—	—	—
40	Dauphin	19	1938	—	—	—	—	—	—	—
41	Armstrong	2	1938	—	—	—	—	—	—	—
41	Totals	541	—	492	9,395	452	3,635.5	13,038.5	31,100.9	47,679.4

Adjoins State Game Lands No. 136; area, 91 acres; 2 refuges, 18 acres.

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